

Energy poverty – from a global perspective to Austria

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Abstract

This paper deals with the situation of energy poverty on various geographical scales (global, Europe, Austria and regional). Different definitions and approaches concerning this still marginalized social problem are discussed. The main focus of this text lies on energy poverty in Austria that will be discussed on a national level and by a case study carried out in the province of Styria. Energy poverty is a complex arrangement that covers all three pillars of sustainability; the financial inability of the energy poor to invest in their energy efficiency (1), the environmental performance of these households (2) and the social situation of a financial deprived lifestyle (3). This paper tries to give a first impression of this complexity by an overview of the current research that tries to fathom its dimensions and possible policy approaches. It is the core understanding of the author that only by addressing socioeconomically weak groups the problem of the ever rising consumption of energy on the household level can be properly understood and mitigated.

Keywords: energy poverty, private household, energy consumption, social inequality

Introduction

Energy consumption (especially by private households) is one of the biggest challenges for the transformation of our societies toward a sustainable future. However, the consumption of energy on the private household level is not evenly spread throughout the world or within specific societies. Social inequality needs to be considered in the debate about strategies to increase the sustainability of lifestyles or the energy efficiency of private homes. Energy poverty (or fuel poverty)¹ is an increasing problem in developing as well in industrialized countries. This paper will start with an overview on the different scales and faces of energy poverty around the globe and will then focus on energy poverty in Austria by discussing a case study in the province of Styria. I will conclude with a discussion of the different perspectives and challenges concerning energy poverty.

Definition

The concept of energy poverty originated during the oil crisis of the 1970ies in the United Kingdom (UK) and therefore the first theoretical conceptualizations and research activities emerged in the British area. The research of the past two decades dealt mostly with the desideratum for a consistent definition, quantitative analysis of the problem, policy strategies and approaches to tackle the issue on the household level. Despite all this research activity in the UK energy poverty is a rather new topic in the Austrian or other European science communities. The first report on energy poverty in Austria was published in 2009 (Proidl 2009). Since then research was mostly embedded into applied programs to increase the energy efficiency of low income or socially vulnerable households. Also a series of programs that focused specifically on energy counseling for vulnerable households was launched. Long term effects of such initiatives remain yet to be investigated. An increase of scientific activity can also be observed in the last three years. The main target of several research projects was to analyze energy efficiency and the individual energy-lifestyle of low-income households. Qualitative research was carried out to understand the consequences, effects and coping mechanism of energy poor homes.

There is no official definition of energy poverty in Austria and specific quantitative data on the issue is scarce. The subject of energy poverty is still rarely discussed and cannot be characterized as a standalone social problem in public or political discourse. Only two European countries (United Kingdom and Ireland) have an official definition of energy poverty. According to the annual energy poverty review of the British government 16% of British households were energy poor in 2009 (DECC 2010). These definitions mainly refer to the monthly expenditure for heating and tend to exclude other forms of energy use in the household (Morgan 2008). The issue and public perception of the inability to pay monthly energy bills by a significant part of the British population originated in the oil crisis in the 1970ies. The main causes were the dramatic increase of fossil fuel prices and a change in the billing policies of the energy utilities (Boardman 1991).

Boardman (1991) understands energy poverty as a combination of low income, energy affordability and energy efficiency. Energy poverty therefore consists of several dimensions that are connected, but they can also be understood as separate issues. These dimensions are the general problem of income poverty (1), the disproportional expenditure for energy services and the ever rising prices of fossil based energy (2) and also behavioral aspects of energy use in the private home (3). The first dimension (income poverty) focuses on the socio-economic structure of a society. Energy efficiency in the private home is influenced by the built infrastructure (insulation and heating system) and the energy efficiency of white goods. The energy efficient lifestyle of tenants is influenced by their general information on the subject, the embeddedness of energy use in daily practices and routines (Shove

¹ In this paper the term “energy poverty” is used instead of “fuel poverty” (that is the common term in the United Kingdom), because it is a direct translation from its German counterpart, has a more holistic meaning and considers all forms of energy services that are consumed in the private household.

2003) and their individual ability to act for themselves (this ability can be hindered by social, physical and psychological circumstances).

According to Boardman's understanding a household is energy poor when the monthly expenditure for all energy services exceeds ten percent of the overall household budget (Boardman 2010). This "10%-definition" is broadly accepted and operationalized among policy and decision makers and the concerned research community. Essential is Boardman's argument for the characteristic of energy poverty as a unique and legitimate social problem. Energy poverty is often only seen as a by-product of general income poverty, but is primarily rooted in the inability to change or improve energy efficiency. This situation cannot be changed by an increase of wages alone:

Fuel poverty is different from poverty. General poverty can be reduced through additional income support, but the most effective way to lessen fuel poverty is through capital investment. It is the crucial role of capital stocks – the house, heating system and other energy using equipment – in causing fuel poverty that determines the need for policies that are specific to the problem. A home is energy inefficient, because of a lack of investment and improvement. The occupants, therefore, have to buy expensive warmth and other energy services – they have to pay more to keep warm than people in homes where there has been a higher level on investment in energy efficiency measures (Boardman 1991, 221).

There exist also other approaches to define energy poverty that will not be further scrutinized in this paper, because its main ambition is to give an overview on the energy poverty problem as mentioned before.² There still remain significant definitional challenges for the 10%-definition. For example there is yet no understanding on the duration of energy poverty – does the inability to pay for energy in one month or in one year qualify to be labeled as energy poor? However, for this paper it is sufficient to go along with the common accepted 10%-definition by Boardman (which is expected to be modified and adapted due to an UK-wide review of the national fuel poverty policy in 2012). Since there is no specific statistical data to proof or investigate this definition for the Austrian or other national contexts, the 10%-definition will mainly represent a basis for discussion in the following pages rather than an analytical framework.

Energy poverty around the globe and in Europe

Sovacool et al. (2012) try to grasp energy poverty from a global development perspective. The following numbers of this study will show that it makes a big difference on which regional or national basis the discussion about energy poverty is held. According to this study 1,4 billion people around the world are without a connection to energy grids and can therefore not consume modern energy services. In some countries black outs occur regularly and the insecurity concerning the daily needed energy supply is a part of life. 2,7 billion earth citizens rely on traditional energy resources (wood, dung etc.) to provide their domestic energy for cooking, heating water etc. The gathering of these traditional materials structures daily routines is exhausting and time intensive. Open indoor-fires caused by traditional stoves have serious health effects on the long term (e.g. constant exposure to indoor smoke can cause respiratory illnesses). According to Sovacool et al. energy poverty from a global development perspective has foremost to deal with four dimensions: warmth (1), illumination (2), mechanical power in terms of machinery (3) and mobility (4). The first two dimensions are classic factors in all energy poverty related discussions and analysis. Mechanical power (in this case pumps for irrigation or machines to process harvest) and mobility (the access to infrastructure or the financial capabilities to travel short distances on a daily basis, e.g. to commute between the home and the work place) are in the view of the authors still broadly neglected. Sovacool et al. conclude that is essential to view the access to energy not mainly as a problem that can be solved by better technologies and the

² One alternative approach to grasp energy poverty by objective measurement focuses on the adequate level of warmth in the living area (between 18-21°C according to standards of the World Health Organization (WHO, 2007)); another one is an approach based on statistical indicators (Healy, 2004).

increase of infrastructures. Energy access (and therefore energy poverty) needs to be considered as a basic human rights issue (Sovacool et al. 2012).

Various initiatives in EU-countries to minimize the burden of energy bills of the financial weak have been initialized and carried out in the last five years. In Germany an energy saving campaign reached more than 65.000 households and also included strategies to train long term unemployed as energy counselors in the program. Programs of this kind can be found on the national, regional or local level all over Europe. However scientific analysis of these programs is scarce.

The transition of the energy system in Eastern Europe (especially in the so-called new EU-member states) is an interesting example for the connection of socio-technical developments and socio-economic change (in this case rising energy prices due to privatization and increasing social inequality). Since 1991 massive economic transformations, also concerning the energy industries, took place in Eastern Europe. The transformation of a former socialist socio-technological infrastructure into liberal and privatized market structures came to most vulnerable consumers as a shock (foremost in financial terms). Energy consumption became an individualized process of consumption. The infrastructure of most utilities in this period of transition had to be updated or reorganized to fit this reframing of energy as a product that had to be billed and measured on the household level. Buzar states that the decision makers in this time of transformation failed to anticipate the ramifications of the liberalization process for vulnerable households. He concludes that there was and still is a lack of understanding concerning the interaction between the development of public social systems, strategies of public housing and infrastructure and energy system and price developments (Buzar 2007).

Despite increasing European research projects funded by various funds that mainly aim at applied initiatives to increase the energy efficiency of citizens there is still little cross-European research activity in general. Most of the EU-countries do not consider the problem as essential for their social or energy efficiency policies. Thus, there is a consistent gap of comparative data. Until now there exists only one (quantitative) long-term study on the connection between the liberalization (vertical disintegration or unbundling) of the European energy system and its consequences for the low-income consumers carried out by Poggi and Florio in 2011. The authors analyzed data of the European Community Household Panel (ECHP) and the European Statistics on Income and Living Conditions survey (EU-SILC) and combine it with data regarding to the liberalization process between 1994 and 2001. One key factor to prevent negative price developments was found to be effective competition. Poggi and Florio state that the connection between deprivation (i.e. energy poverty in this context) and liberalization is hard to detect and further analysis is needed, but that there is a clear connection between “decreasing vertical integration in the electricity sector and reducing public ownership” and the probability to experience energy poverty in the concerned timeframe (Poggi & Florio 2011). The study does not provide specific data on the Austrian situation that will be outlined in the next chapter.

Energy poverty in Austria

The subject of energy poverty is still rarely discussed and cannot be characterized as a standalone social problem in public or political discourse. But the issue of ever rising prices for energy services is of increasing importance. The German term “Energiearmut” (a literal translation of “energy poverty”) is hardly ever used in public media or in policy discourses, but the development of energy prices and rising income poverty are regular topics of news coverage. The issue of affordable warmth tends to become relevant at the start of the heating season and during cold spells. It is brought to the public mostly by campaigning social welfare NGOs. Subsidies for heating do exist, but vary from province to province due to the federal system of Austria. Few utilities provide special social tariffs for vulnerable customers and such initiatives must be seen as exceptions. Due to the lack of an official definition of energy poverty in Austria the national statistical agency does not provide specific data on this issue. To amplify the recognition of energy poverty as a genuine social problem a national definition must be established and more comprehensive quantitative and structural data must be gathered (Getzinger & Berger 2011).

Rising fuel prices, energy inefficient housing and increasing income poverty can be identified as the main drivers of energy poverty in Austria. About one million of the 8.4 million citizens or 12% of the

population are at risk of income poverty (Statistik Austria 2011a). The annual change of the poverty rate due to OECD calculations is a plus of 2,7%. This is one of the highest growing rates for poverty in the OECD (OECD 2011). The EU-SILC survey (survey on income and living conditions) for the year 2010 showed that about 4% (313.000 citizens) of the Austrian population were not able to heat their living space to an adequate level (BMASK 2011). The latest published study on household consumption in Austria shows a serious development for low income households (see also figure 1). From 2004 till 2005 the lowest income quartile used 5,6% of its budget for energy. In the current study focusing on the period between 2009 and 2010 the lowest income quartile already used 8,3% of its budget for the same matter. Contrary to this development the monthly expenditure for energy of the richest household quartile dropped from 3,8% (2004/2005) to 3,3% (2009/2010) (AK Oberösterreich 2011; Statistik Austria 2011b). This trend is also displayed in the European Quality of Life Survey (EQLS) 2007. 3,7% of the Austrian population answered that they are unable to afford adequate heating in the living area. The lowest income quartile was above average with 6,7% (EQLS 2009).

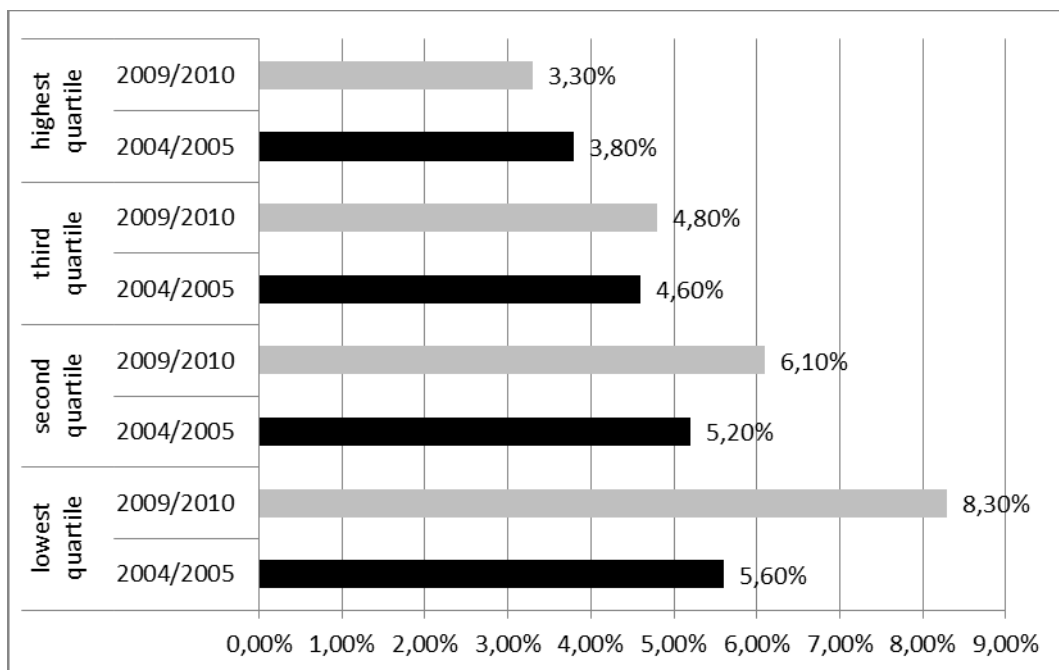


Figure 1: Development of monthly household energy expenditures for energy 2004/2005 vs. 2009/2010 by income quartile (AK Oberösterreich 2011; Statistik Austria 2011b, mod. by author)

The actual consequences of energy poverty reach from an increased possibility of long term illnesses to psychological problems. An energy deprived lifestyle can lead to permanent neuroses and social isolation. Due to the cold and moister in the living compartments respiratory illnesses are health risks especially to elder people. The lack of proper heating in private homes can also lead to the damaging of the dwelling itself (EFPEE 2007). There exists empirical evidence for the connection of room temperature with the physical wellbeing of infants and children and the psychological health of adolescents, grownups and seniors (Liddell & Morris 2010). For example, the estimated annual cost for the British public health services caused by inefficient insulation in private households is about 145 million pounds (Mason & Roys 2012).

Current research in Austria

Energy poverty emerged in the Austria research community in 2009 when the first study about energy consumption in low-income households was published. The financial inability of income poor households to increase their energy efficiency was one of the main findings of the report and was described as a vicious circle that cannot be broken on the individual household level (see figure 2). Due to their insufficient financial situation and the low standard of their dwellings or flats the energy

consumption in these household is disproportional. This increased energy consumption culminates in the inability to pay energy bills and often leads to additional fines by the energy utilities. Hence, this financial situation keeps perpetuating itself because of the inability of the poor households to change their situations in any substantial way. External financial support or non-cash benefits are needed to increase their energy efficiency (Proidl 2009).

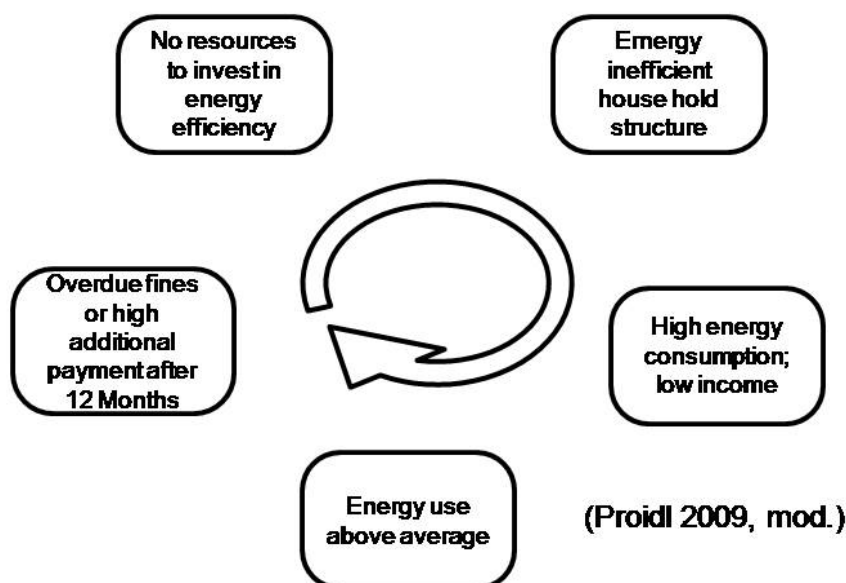


Figure 2: vicious circle of energy inefficiency in energy poor households

Since then research mainly focused on energy consumption on the household level and a systematic analysis of energy poverty in Austria remains a research desiderate. A recent finished qualitative study on the energy lifestyle of income poor households in Vienna came to the following three main conclusions: income poor households have a very limited potential to increase the energy efficiency of their homes (1); they already live in scarce (financial and/or energy efficiency) conditions and do not waste energy intentionally (this is an important fact and contradicts the common assumption that financially deprived households pay little attention to their consumption behavior at all) (2); the landlord-tenant-dilemma also prevents the improvement of the energy efficiency (installment of new windows or other measures to increase the insulation of the dwelling), because neither of the two parties is interested to invest into measures that have no immediate or limited payoff for themselves (Brunner et al. 2011a; Brunner et al. 2011b).

Besides the described research efforts to understand energy poverty several applied initiatives to increase the energy efficiency of low income households were launched. These programs mainly focused on energy counseling for the inhabitants (some programs included the replacement of old white goods with new energy efficient ones). They mostly focused on a combination of financial support with obligatory energy counseling to increase the energy efficiency on the behavioral level. Until now there exists no study on the long-term effects of such counseling based programs. In 2011 the Austrian funding scheme for climate and energy research recognized energy poverty as a standalone research desiderate for the first time. The call included a project to optimize energy counseling for low income households and the potential of information and communication technologies (ICT) to decrease energy poverty. Both topics targeted the individual or behavioral dimension and underline the current individualistic research agenda on energy poverty in Austria. According to E-control (the Austrian energy market control agency) the current year 2012 will bring several legislative changes for utilities concerning the management of customers with financial difficulties. Fines for the disconnection of households and the installment of prepayment meters will be harmonized. Furthermore, utilities will be obligated to document and publish their annual disconnections of private customers. These new legislative requirements for customer relations will have a positive effect on the statistical data to understand energy poverty, but are not yet officially published.

Styrian case study

The following case study is explorative and qualitative and was conducted in 2011 and will bring the discussion of energy poverty from the national to the regional level. The first study on the situation of energy poverty in the province of Styria showed that the issue is not yet in the perception of public or private institutions and organizations (this observation can be generalized for most parts of Austria), but the consequences of it can be observed in the daily business of social workers, utilities (customer management and relations) and social welfare NGOs. The study included a review of the current literature and statistical material and an interview series (semi-structured) with identified experts (energy utilities, social workers, energy agencies and social welfare NGOs). One of the main findings of the study is that energy poverty, as a combination of low income, rising energy prices, inefficiency and energy consumption is highly individualized and is primarily seen as a problem of consumption behavior and commonly not perceived as a structural problem that is rooted in the energy system and consumption patterns themselves. The systemic embeddedness of energy poverty (the energy system or macro patterns of consumption) still plays a minor role in the concerned Styrian expert community. The following conclusions of the case study illustrate how energy poverty is still neglected among Styrian organizations and institutions (Berger 2011):

(1)The term “energy poverty” is not used in the working contexts of the interviewed experts. But the symptoms of energy poverty (inability to pay bills, disconnection or the installment of prepayment meters) do play an increasing role in the daily work of social workers, NGOs and energy utilities. Due to the missing terminology perspectives on the future development of energy poverty or possible measures to minimize it in Styria are very limited.

(2)The lack of official statistics on the Styrian level concerning the issue led to reluctant statements of the interviewed experts to characterize the energy poor groups. Their statements are therefore inconsistent, but the “classic” income poor social groups seem also to be the most vulnerable social groups in Styria as well. Single parent families, seniors and persons with migration background were therefore identified.

(3)Sickness, depression, deteriorating social inclusion and long term unemployment are social and psychological factors that hinder social workers efforts to improve the living conditions of their clients. These negative social circumstances also diminish the learning of efficient practices of energy consumption in the household.

(4)Energy utilities play a key role in the energy poverty discourse and tend to be the scapegoat in local media reports when the affordability of the ever rising energy prices is discussed. The representatives of utilities emphasized on the systemic reasons of energy poverty and see themselves as actors in a systemic dynamic and their institutional limitations to act on the matter. Disconnections and the installation of prepayment meters are legal options for Austrian utilities. The extent of the implementation of these measures in Styria is yet unknown.

Furthermore, the representatives of the two largest Styrian energy utilities made consistent statements that the unbundling process induced by the liberalization of the Austrian energy system had mayor implications for customer relations and the treatment of “problematic” cases. These changes range from the reorganization and acceleration of the dunning process, growing numbers of prepayment meters, disconnections of indebted households and to a new corporate understanding of energy as a product of private consumption. The prepayment meter can be seen as a symbol of the liberalization and its implication for low-income households. It is a technological device that allows the prevention of a total disconnection from the distribution grid and forces the customer to more or less disconnect himself in times of financial peril. Prepayment meters also lead to a variety of unintended consequences. Due to their different design they are known to lead to discrimination and shame among neighbors.

Conclusion

The aim of this paper was to show the different scales of and perspectives on energy poverty on various scales (global, European, Austrian or regional) and that further discussions about the change or decrease of energy consumption on the level of the private household need to consider the fact that there are social vulnerable groups that lack the financial capabilities to participate in the change toward a sustainable energy future. Future policies of energy provision and transition must also include parts of the population that lack the individual ability to invest in their individual energy efficiency or to participate in the shift towards more sustainable forms of energy consumption. The exclusion of energy poor households would contradict any agenda that aims for a sustainable transition.

Energy poverty (in the understanding of the author) is a legit social, economic and environmental problem and has to be systematically included in agendas that try to tackle the rising energy consumption. Further research into the connection of socio-economic and socio-technical dimensions of energy poverty is therefore needed to fill the yet not sufficiently answered gap to create a set of policies to diminish and end energy poverty. To satisfy or at least to begin to tackle the previous mentioned desiderates for policies and research a European definition and theoretical understanding of energy poverty has to be established.

Energy poverty is a good example for the interconnectedness of the three pillars of sustainability. Social factors, economic (financial) circumstances and the environmental performance of energy poor households cannot be understood or increased by addressing only one or two of the three dimensions. Therefore rising socio-economic inequalities need to be set into the context of individual or household energy consumption. The social and environmental challenges of the coming decades need to be understood in a holistic way.

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