

Towards eco-social policies to tackle the socio-ecological crisis: energy poverty as an interface between welfare and environment

Giovanni Carrosio and Lorenzo De Vidovich 

Department of Political and Social Sciences, University of Trieste, Trieste, Italy

ABSTRACT

The interplay between the environmental issues – embedded in the climate crisis – and the sustainability of welfare systems is a recent research topic that is unfolding the complexities behind the environmental and the fiscal crises. Drawing on an extensive literature, this paper fits in this debate with a theoretical focus on ‘eco-welfare’ and the relevant eco-social policies seen as viable solutions to tackle the twofold socio-ecological crisis. The article discusses how the two crises are addressed by mainstream policies, and then it sets out the eco-welfare framework. In so doing, the paper enhances the relevance of pre-distribution factors in recognizing the interdependencies between social and environmental sustainability. Subsequently, the paper identifies energy poverty as a meaningful research topic to be addressed through an eco-welfare framework, by posing a peculiar attention to the social determinants behind the notion of ‘fuel poor’. Overall, the paper discusses both the contents of the environmental welfare state at a time of socio-ecological crisis, and the multidimensional aspects of energy poverty.

Introduction

The acceleration of the climate crisis has led several scholars to question the relationship between the environmental crisis and the sustainability of the welfare state (Hirvilammi and Koch 2020; Gough 2016). From an analytical point of view, such a reflection concerns the consequences of the de-carbonization of welfare (Gough and Meadowcroft 2011) and the decoupling between economic growth and redistributive forms of support for social rights (Koch 2013). This is the culmination of several studies on the environmental and social contradictions of capitalism, which began to emerge from in 1970s (O’Connor 1973, 1991; Schnaiberg 1980). This literature has highlighted how the welfare system of Western countries is inextricably linked to the paradigm of economic growth: this has led to an increasing and unsustainable use of natural resources (Osti 2013), giving shape to heterogeneous processes of ‘commodification’ of nature (Kaika, Heynen, and Swyngedouw 2006). The interplay between growth and welfare has been described as a ‘treadmill of production’ (Schnaiberg, Pellow, and Weinberg 2002), and it has unwillingly contributed to the environmental crisis. At the same time, the environmental crisis affects the difficulty of giving impetus to a new cycle of accumulation-redistribution (O’Connor 1991): the deterioration of natural resources and the environmental costs of production mean that transforming nature into commodities is always more expensive (Moore 2017).

The growing interdependencies between the fiscal crisis of the state and the environmental crisis require us to reflect upon new ways of building welfare systems, to enhance that ‘along with social and economic issues, ecological considerations are interrelated pillars of sustainability’ (Koch et al. 2016, 706). On the one hand, this conceptual effort entails an understanding of how the welfare state could emancipate itself from the growth paradigm; on the other hand, it involves considerations on how to mend the fractures between society and the environment, towards the construction of eco-social policies. Whilst from an analytical viewpoint the contradiction between the environmental crisis and the fiscal crisis is supported by robust literature, from the viewpoint of the empirical repercussions, policies capable of benefiting from an analytical framework where welfare and the environment interact, have not yet been processed.

Furthermore, as argued by Walker, Druckman, and Jackson (2021), considering that deprioritizing economic growth is likely essential in order to avert catastrophic climate change, the issue related to the ways in which is possible to maintain funding for the welfare system in a non-growing economy is timely and pivotal. Cahen-Fourout (2020) likewise suggests that capitalism today is entrenched within the environmental issue, insofar as environmental policies and ecological sentiments emerge in different capitalist systems, even in the most ecology-prone countries, which therefore pursue objectives related to economic growth.

On such basis, this paper discusses the recently framed perspective of 'eco-welfare' to identify analytical and studying pathways able to combine environmental concerns with the preservation and protection of social rights, in line with what is also expressed through the seventeen UN Sustainable Development Goals. Simply put, the contribution makes the case for the need to observe the interwoven relationship that runs between environmental rights on the one hand and social rights on the other hand. This aim entwines some concerns that correspond to the actions foreseen by several SDGs, such as the tenth, about the reduction of inequalities, the thirteenth goal on the implementation of climate actions to tackle the consequences of climate change, and the seventh on the pathway towards clean and affordable energy provision. We, therefore, intend to steer the 'eco-welfare' debate with an attempt of tracing some suggestions in the direction towards a new policy paradigm, which brings together environmental limits and social rights. We argue that eco-welfare is to be seen as a frame where environmental and social policies cannot act as separate areas, but rather, they are one constitutive of the other. Drawing on this, the paper primarily intends to deeply investigate the interdependencies between the environmental crisis and the fiscal crisis; in the second part, it discusses how the two crises are addressed by mainstream policies; in the third part, the paper introduces the analytical framework of eco-welfare, to imagine how it is possible to work to recompose the fractures between the environment and society, constructing policies that focus on the aspects of prevention and pre-distribution in their methods of intervention and which recognize positively the interdependencies between social sustainability and environmental sustainability. In this respect, the third part also benefits from an overview of the issue of energy poverty: this topic enables us to bring out and exemplify the relationships between social and environmental crises. Methods of defining and addressing energy poverty reveal different theoretical and policy perspectives in which to place the problem. Energy poverty, therefore, does not represent the core of the paper's contents, but it is rather discussed as a research field that provides novel insights for the development of 'eco-welfare' not only as a conceptual paradigm but also as a policy paradigm. The fourth part systematizes the key theoretical issues behind the eco-welfare perspective through the focus on energy poverty. Concluding remarks are referred to possible empirical insights on energy poverty as a topic able to enact the eco-welfare framework. Against this background, the very aim of this paper is to discuss the 'eco-welfare' paradigm with the help of a policy and research field – i.e. energy poverty – which illustrates some insightful considerations about the ways in which eco-social policies might be encouraged in a strong tie between

social and environmental concerns. In other words, we do not introduce energy poverty as a fruitful research field for eco-welfare. Rather, we adopt some of the scholarships from energy poverty to identify an analytical field placed between welfare and the environment, which leads to the eco-welfare paradigm.

The socio-ecological crisis: the interdependencies between welfare and environment

We refer to the concept of socio-ecological crisis to analytically establish the non-separability of the environmental crisis and the fiscal crisis of the state (Villa 2019; Carrosio 2020b). These two crises are interdependent and feed on each other through causal relationships, producing incremental complexity and instability. Affirming their interdependency means considering that it is not possible to investigate them separately, without considering the actions and feedback that one exerts on the other. The welfare state is sustainable only if it can count on the constant growth of economic resources: demographic changes, new social risks and growing needs require more and more investments (Büchs 2021). Growth should allow the state not to have to choose how to allocate resources, to grant more and more rights to people and to guarantee support for the economic system. When the growth mechanism gets stuck, the state must start making choices. It experiences a continuous contradiction between the need to legitimize itself socially and the need to support the mechanisms of accumulation of wealth (O'Connor 1973). On the other hand, the environmental crisis embodies the contradiction between the paradigm of growth, which requires an ever faster and more pervasive transformation of nature into commodities, and the limits of ecosystems. Coping with the environmental crisis means reducing economic expansion, to prevent further deterioration of ecosystem conditions, as also suggested by Jorgenson (2014) when he demonstrates that economic development increases the 'carbon intensity' of human well-being. A retrenchment of economic expansion might be done by reducing the energy intensity of growth, or by unconditionally downsizing the use of environmental resources.

Based on these first elements, some researchers ask themselves what the future of the welfare state will be, crushed in an environmental paradox: within the paradigm of growth, welfare needs the production-accumulation-redistribution relation to flourish¹; simultaneously, the retrenchment of welfare systems would lead to unsustainable consequences for the protection of the environment (Bailey 2015). This occurs because the inequalities resulting from the retrenchment of welfare lead to greater degradation of ecosystems (see Boyce 2019). In this view, welfare

systems could be called upon to repair the failures caused by the social consequences of policies for the decarbonisation of production systems (Koch 2018).

To point out the interwoven relationship between welfare and the environment (see Figure 1), we move from the evidence that the environmental crisis is represented by two contextual elements: acceleration and artificialization. The acceleration is the tension between the speed of transformation of nature into commodities – the rhythms of capitalism – and the speed with which natural resources are able to reproduce. According to O'Connor, this is the second contradiction of capitalism (1991). Climate change is empirical evidence of acceleration: carbon dioxide stored in the atmosphere is the materialization of this process. Industrialization on a planetary scale has produced an exponential growth in emissions, faster than the capacity of ecosystems (biocapacity) to reabsorb them. Artificialization, on the other hand, is the process of rationalization of nature by the industrial system (van der Ploeg 2009). The product of artificialization is the breaking of the co-evolution process between man and the environment. Economies based on the reproduction of localized environmental resources become residual, synthetic products are born and those value chains that still need to transform nature into commodities are lengthened. Urbanization leads to the abandonment of neighboring territories and the structuring of global chains within which natural resources are assembled that lose their original characteristics. The combination of the growth paradigm and linear capitalism leads to the main contradiction that takes shape in the environmental crisis: economic growth challenges the finitude of natural resources and the depletion of natural resources erodes the material foundations of growth. Moreover, the environmental crisis becomes a vector of social risks. It acts directly on the well-being of people and the safety of living places; indirectly, adaptation policies can create fiscal competition between welfare and environmental demands (Gough 2017).

The environment thus becomes the third element of the already existing competition between legitimization and redistribution, which characterizes the fiscal crisis of the state. The fiscal crisis of the state (O'Connor 1973) puts in tension two tasks that the state must perform at the same time: accumulation and legitimization. In other words, the contradiction between the concentration of resources to facilitate the accumulation process (acceleration) and the redistribution of resources to support the welfare state system. This contradiction has been managed for several years by leveraging economic growth, which allowed tensions to be alleviated thanks to the growing availability of wealth. With the crisis of the Fordist system, the mechanisms of growth began to jam and various restructuring of the capitalist systems followed, which however did not produce strong discontinuities in the capacity for accumulation. The crisis of growth has been linked to the environmental crisis: it produces an increase in the costs of transforming nature into commodities (Moore 2017) and the environmental costs of development (loss of biodiversity, air pollution, hydrogeological instability, climate change, waste disposal) become a cost of the state, entering into competition with the allocation of resources between enterprises and social rights. The difficulty in guaranteeing rights and redistribution of wealth together with the neoliberalization of welfare systems has caused, at least since the 1980s, the growth of economic and social inequalities. As many works on the relationship between wealth gaps and ecological crisis now show, the growth of inequalities leads to an acceleration of environmental degradation (Grunewald et al. 2017; Boyce 2019).

Environmental degradation would therefore be positively correlated to the growing distance between strong and weak classes in terms of wealth and power. For this reason, some researchers have related inequalities of power to the different environmental policies in the United States, finding that the states with the most radical and social justice-conscious environmental

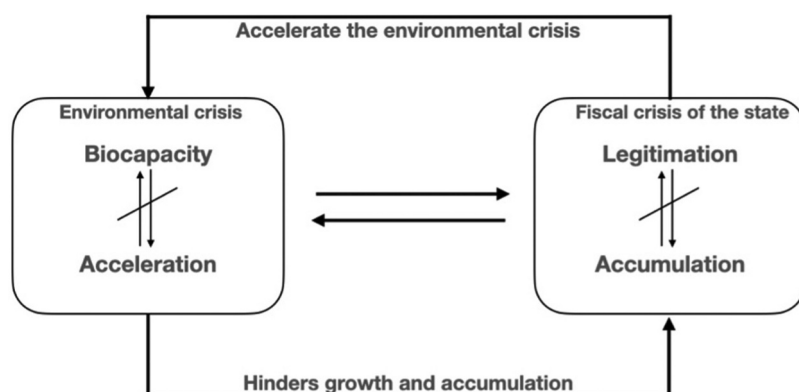


Figure 1. The interdependencies of the socio-ecological crisis. Own elaboration

policies are those where the distribution of power is fairer (Boyce et al. 1999). Moving from here, many studies have demonstrated that as inequalities increase, deforestation rates, biodiversity erosion, climate-altering emissions and the incidence of the population living in areas at hydrogeological risk increase too (Hassan, Zaman, and Gul 2015). Environmental sustainability and the sustainability of the welfare state system are therefore strictly interdependent, in a spiral from which it seems very difficult to escape, although recent insights suggested that the growth-dependency of the welfare state seems fragile and that the pathway towards a 'socio-ecological state' in the face of the human impact of climate change, is a viable solution, beyond growth's criticism (Laurent 2021).

The socio-ecological crisis in the mainstream policies

To date, public policies have addressed the environmental crisis and the crisis of the welfare system as separate areas. As argued by Gough (2017, 112) 'political scientists have found that welfare policies prevail over environmental policies'. The academic debate on the one hand, and the public policy literature on the other hand, likewise tend to focus more or less narrowly on single policy areas and assessments of climate policy are addressed in different journals from those that publish articles about social policy and welfare state reforms (Koch et al. 2016). The absence of an interdependent reading of these phenomena has prevented researchers and policymakers from the implementation of targeted actions and policies capable of tackling and solving the contradictions between welfare and environmental crisis, rather than exacerbating them. Substantially, in most Western countries, the welfare crisis was tackled by trying to recalibrate interventions to intercept new social risks, but within a context of austerity, which led both to a reduction in the total amount of economic resources destined for welfare and to the emergence of welfare-to-work and activation policies. This dynamic was called 'subtractive recalibration' of services (Ferrera 2012) and it defines the adaptation of welfare to the emerging needs of societies and its shift towards people empowerment without an increase in economic resources, it led to a levelling down of the performance of welfare systems, protecting some groups and activating others, but generating at the same time new forms of exclusion and reducing the effectiveness of the welfare interventions. Such a way of adjusting and recasting the welfare system is entirely embedded within the cyclic accumulation-redistribution model. According to this, the retrenchment of welfare may be read as a consequence of the crisis of the wealth accumulation mechanisms. The accumulation crisis, combined with

the effects of the environmental crisis on growth, allows neoliberal policies to reduce resources for welfare. The steady situation of Western economies does not allow the increase of the economic resources to be allocated, and the pathways towards privatization of services and a reduction of resources allocated in social policies by the State seem to be the only ones to follow.

Against this backdrop, the environmental crisis has to be addressed within the paradigm of ecological modernization (Spaargaren 2000). Ecological modernization is both a theory and a policy programme that describes the ecological transition as a process that must be oriented to the market economy and the exploitation of technological innovations, and it prescribes economic growth as a precondition for investing in sustainability. At the heart of the transition is not a change in the social order, but technological innovation. Technological innovation must be used to reduce the unwanted effects of growth, dematerialize production processes and reduce the energy intensity of production. In this sense, unlike the environmental critique of capitalism, this approach enhances the modernization process, believing it can be re-oriented from an ecological point of view. The rationale of ecological modernization has been actively promoted by the Organization of Economic Cooperation and Development (OECD), the World Bank, the United Nations (UN) and the European Union (EU) in the pursuit of a green transition that maintains high levels of economic development measured in per capita GDP, while at the same time decreasing carbon emissions and the ecological footprints of production and consumption (Koch 2018). The main policy tools adopted to promote the ecological transition within the paradigm of modernization are those of a distributive type: in particular, monetary or fiscal incentives for businesses and citizens to adopt greener production systems and more sustainable consumption practices. In the case of the energy transition, incentives for the installation of energy production systems from renewable sources and the adoption of energy-saving devices.

Drawing on these theoretical insights, we can advance a critical reflection upon the ways in which the socio-ecological crisis is addressed in mainstream policies. If we look at the nature of the policies that today address both the environmental and the social questions, we notice that they result in a mix of distribution, redistribution and regulation. Environmental policies (especially regulatory and distributive) address the secondary effects of economic growth, whereas social policies (especially redistributive) seek to mitigate the inequalities and social needs arising from capitalist systems. They act as separate areas and do not even ask themselves what consequences social policies have on the environment and what

repercussions environmental policies have on inequalities (Laurent 2021). In the attempt to define an analytical framework of public policies regarding the relationship between well-being and the environment, we identify four different models inspired by the classification of policies' schemes designed by Lowi (1972), which still plays a pivotal role in the observation of policy frameworks. As illustrated by Figure 2, we can classify environmental policies based on their attention to social inclusion and their willingness to how wealth is formed. In this way, we obtain two continuums: the first represents the impact of policies on the distribution of wealth; the second, however, is the impact on the logic of the accumulation of wealth. Starting from the intersection of these variables, we obtain four ideal types that are representative of the variety of socio-ecological policies.

The distributive model refers to the policies that allocate resources and/or encourage specific behaviours without a well-defined allocation of costs to targeted recipients. However, due to their supposed social neutrality, they often end up redistributing resources in a regressive way (see, for instance, the tax bonuses for energy retrofitting projects, of which the upper and middle classes have mainly benefited; see Carrosio 2021). These policies may be seen as typical of the ecologic modernization rationale. The redistributive model unambiguously identifies a target of vulnerable and deprived populations to support. However, it is not always clear to whom they take away resources for redistribution purposes (see,

e.g. the 'energy bonuses', a measure that supports the income of poor people in the payment of electricity and heating bills). This model may fit into the rationale of the 'environmental welfare state' (Gough 2015, 2016; Gough and Meadowcroft 2011). The regulative model defines regulatory arrangements aimed at making the market more efficient, with the idea that more competitive markets lead to tangible benefits for the consumers, whether they are rich or poor (e.g. the liberalization of the electricity market; see Osti 2013). They contrast the modalities through which wealth is formed but with a neutral standpoint concerning the repercussions on social inequalities. Policies referred to this model may be seen as examples of a 'neoliberal ecological state', where the regulatory frameworks are designed to protect capitalist accumulation within the green transition (McCarthy and Prudham 2004). Czarnezki and Fiedler (2016) coined the concept of 'neoliberal turn of regulatory policies', referring to the use of 'market-based' mechanisms to achieve environmental protection and information dissemination and regulation (such as labelling and advertising) to influence consumer preferences" (p. 1). The fourth, pre-distributive model, brings together regulatory principles with particular attention to the social implications and repercussions of the policy interventions, by addressing the regulatory and social mechanisms of wealth formation (see, for instance, the community energy initiatives, which attempt to tackle the social problem of energy poverty by building communities and socialized systems for the production of energy

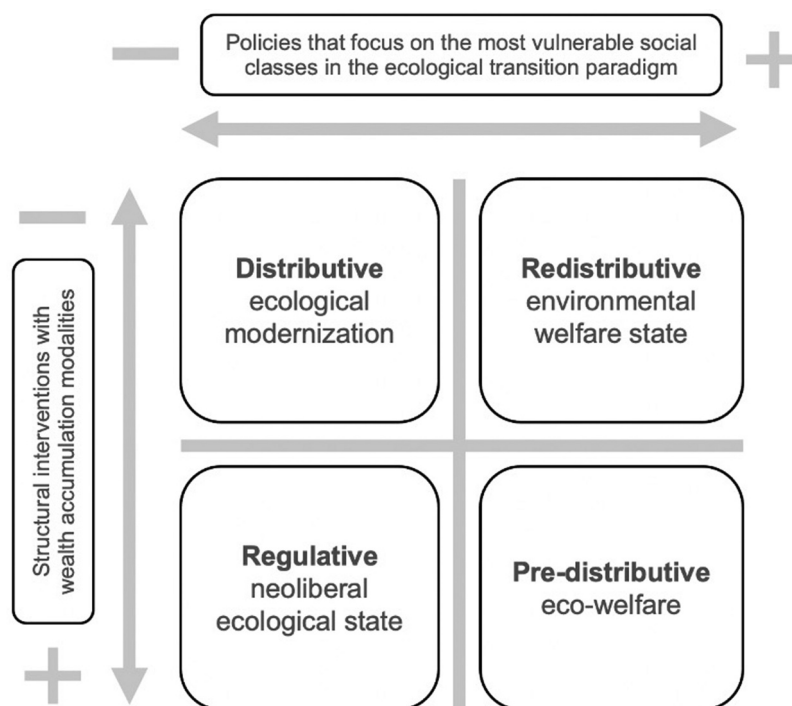


Figure 2. Fourfold classification of policy models within the ecological transition and the wealth accumulation cycle. Author's adaptation of the policies' classification scheme by Lowi (1972)

from renewable sources; see Walker and Devine-Wright 2008; van der Schoor and Scholtens 2015; Bilardo et al. 2020; Savelli and Morstyn 2021).

Policies with a pre-distributive rationale are at the same time highly regulative and enabling, as they intervene in the construction of welfare, to mobilize and ensure that the most vulnerable populations can benefit from this wealth formation. Rather than equalizing unfair market outcomes through tax-and-spend or tax-and-transfer, pre-distributive policies engineer markets at their internal structural level, to create fairer outcomes from the beginning (Vogel 2018). Socio-ecological pre-distributive policies are part of those attempts aimed at modifying the mechanisms of wealth formation, using ecological conversion as means of separating people's well-being from growth. They differ from regulatory policies insofar as they put firstly people rather than capital at the core of their intervention. They differ from distribution inasmuch as they concentrate resources for technological innovation with a posture that is not socially blind, and ultimately, they also differ from redistributive policies given the fact that they address the 'socialization of wealth' before accumulation, to prevent social and environmental inequalities. The promotion of energy communities, for instance, which are collective forms of energy production, consumption and sharing of energy produced from renewable sources, represents a pre-distributive policy. Renewable energy communities ensure that citizens participate in the ecological transition by benefiting from the wealth produced by energy production and reducing their energy expenditure (Wahlund and Palm 2022). Wealth is socialized before being accumulated and redistributed because in a cooperative system, each member directly benefits from the wealth produced. If energy communities also intercept people with severe problems of poverty, they can also turn into welfare devices.

The marginalization of pre-distributive policies within the ecological transition

According to these typologies, we notice how mainstream policies for ecological transition merge different typologies of policies, marginalizing those of a pre-distributive nature. The combination of the promotion of technological innovation and market tools has generated policies for the promotion of energy retrofit devices and plants for the production of energy from renewable sources. To stimulate energy transition, this sort of policy has encouraged, for instance, the replacement of polluting cars with electric or hybrid cars. They were designed to look at a mix of incentives and regulatory tools aimed at changing the behavior of citizens and businesses. Nonetheless, these policies were differently accessible to citizens, excluding the lower middle classes from the ecological transition

(Carrosio 2021). The main rationale behind these policies was to promote the energy transition by encouraging the upper-middle class to innovate in behavior, spread new products on the market and generate the economies of scale necessary to make them become mass devices. For different reasons, the lower and middle classes have had difficulty in the access to these policies, as they are often tenants, or precarious households, with low incomes, unable to generate substantial savings. These types of situations face, for many reasons, tangible problems in the access to policies based on direct incentives, or in the form of tax deductions (Carrosio 2021).

On the one hand, we witness welfare policies that are retracting and fueling the environmental crisis; on the other hand, we face environmental policies that exacerbate social inequalities (Bailey 2015), hence producing a further demand for welfare services and social protection systems.² This situation occurs because the two classes of policies do not recognize the socio-ecological crisis as a result of the interdependencies between the welfare crisis and the environmental crisis, and consequently they do not work to recompose the contradictions running between the two crises. Looking at a re-composition entails consistent efforts dedicated to the possible interdependencies between social and environmental policies, where one is called upon to support the other. In this view, echoing Gough (2017), growing demand for climate adaptation will exert more pressure on strained fiscal and welfare systems, as climate change carries along new configurations of risk, injury, and inequity for social policy. Within the under-construction interplay between social and environmental policies, the theme of energy poverty gains a peculiar relevance, as an interface conceptual tool to bridge the two policy fields. The analysis of how up to now the policies have defined energy poverty and have acted to counter it allows us to exemplify the interdependencies of the socio-ecological crisis and at the same time to put the sociological imagination at work towards the development of a model of intervention based upon an eco-welfare perspective, capable of jointly addressing social problems and environmental problems. In so doing, social policies assume an environmental posture and, vice versa, the environmental ones assume a social posture.

Recognizing the socio-ecological crisis: towards eco-welfare policies

The recognition of the interdependencies between the environmental crisis and the fiscal crisis of the state enables tackling social policies without separating the social and environmental spheres. This aspect has been also framed into the idea of an 'eco-social state' in the EU, to address the relationship between social and climate policies among Member States

(Kaklauskaitė and Navickė, 2021). Against this background, eco-welfare is a perspective that entails the twofold aim of ensuring principles of social equity in the energy transition, and of accelerating the process of low-carbon energy consumption, considered more just and sustainable (Bickerstaff, Walker, and Bulkeley 2013; Simcock and Mullen 2016). In this respect, the eco-social policy framework is to be seen as a tool for reducing economic and social inequalities, and the welfare systems undertake a path that leads them to break away from the Fordist paradigm, putting at the center pre-distribution policies (O'Neill 2020). In a closer relationship with eco-welfare, debates on 'sustainable welfare' have put issues of 'universal' basic incomes and services in the spotlight (Büchs 2021). However, according to the aforementioned classification of policy models, the connection between pre-distribution policies and environmental issues is well epitomized by other spheres that involve basic services supply, such as energy and, in turn, the topic of energy poverty to address issues of vulnerability and scarcity. We focus on this issue to exemplify with a concrete case the diverse approaches to eco-social problems adopted by the different types of the abovementioned policies. Therefore, the focus on energy poverty enables the application of the eco-social standpoint to the practical dimension of energy consumption, to disclose whether and how energy vulnerabilities in energy consumption can be tackled through eco-social policies. Against this backdrop, in the next paragraph, we attempt to explain how different ways of investigating energy poverty may lead to different policy solutions. On one hand, we identify the mainstream policies, anchored to the accumulation-redistribution paradigm and blind mechanism with respect to life contexts and the environmental determinants of poverty. On the other hand, opposite to this sort of policy, we depict the pre-distributive approach, which rather put at the center of their intervention the life contexts and seeks solutions acting upstream of problems, so that the interventions on environmental determinants will also answer to social problems.

Energy poverty: a topic to address eco-welfare

Energy prices have been soaring since early 2021 due to a combination of supply and demand factors (OECD 2022). This interplay includes long-term trends such as underinvestment in natural gas and clean energy supply, short-term developments like reductions in natural gas spot delivery by Russia and a strong recovery in demand in the aftermath of the COVID-19 slump (IEA 2021), and even an increase in the demand during the summer months (Thomson and Bouzarovski 2019; Živčić 2021).

Energy poverty today represents a global issue (Bouzarovski and Petrova 2015), and it can be defined as a condition that occurs 'when a household is unable

to secure a level and quality of domestic energy services – space cooling and heating, cooking, appliances, information technology – sufficient for its social and material needs' (Bouzarovski 2018, 1). In other words, energy poverty can be intended as the difficulty experienced by households to get a minimum set of energy services in the home (Thomson, Bouzarovski, and Snell 2017), with negative consequences on their well-being (Faiella and Lavecchia 2015).

The discussion about a relative and common European definition and measure of energy poverty strongly characterized the debate over the decades (see Moore 2012), fueled not only by the rise of growing public awareness (Bouzarovski 2014) but also by the research need to quantify the presence of fuel poverty in a country (Thomson and Snell 2013), towards the development of composite indexes (Nussbaumer, Bazilian, and Modi 2012).

Furthermore, several contributing factors determine energy poverty, by distinguishing it from general poverty (Boardman 1991). The literature cites the cost of energy, income levels, the energy performance of homes, the climatic-environmental context and the capabilities in the use of energy (Faiella and Lavecchia 2015; Pye et al. 2015).

Findings from the EPEE project (European Fuel Poverty and Energy Efficiency Project 2009) has identified as vulnerable populations those out of work or with poorly paid jobs, and those dependent from social security benefit (see also Healy and Clinch 2004; Wright 2004; Chard and Walker 2016). Being in this condition implies suffering the consequences of energy poverty in terms of quality of life, well-being and health: houses that are too cold in the winter months (Anderson, White, and Finney 2012) and too hot in the summer period increase the probability of contracting respiratory illnesses (see Fisk, Lei-Gomez, and Mendell 2006) and cardiovascular diseases (Sokołowski et al. 2020). In this case, we are talking about the socio-environmental determinants of health (Liddell and Morris 2010). In the event that energy poverty is induced by the poor insulation of buildings, which require a lot of energy to be heated or cooled, there are also consequences on air pollution and climate change. The nexus between the social and environmental dimensions of energy poverty lies in such consequences.

Against this background, at the European level the concept has always necessitated an omnicomprehensive definition able to involve these different aspects (Thomson, Snell, and Liddell 2016). In 1989, based on some analyses of poor families, the British debate identified a condition of energy poverty when a household dedicate more than 10% of the income to energy consumption, by keeping the house warm at 21°C in the living room and 18°C in the other rooms (Boardman 1991). In the 2010s,

further advancements classified a situation of households with low income but high costs (LIHC – *Low Income High Costs*) to define a ‘fuel poor’ (Hills 2011). LIHC indicator entails two conditions: (1) an expenditure for energy above the national median value (hence overcoming the arbitrary 10% threshold), and (2) an income, net of energy expenditure, that position the household below the poverty threshold according to Eurostat methodologies, equal to 60% of the median equivalized income (see Moore 2012; Faiella and Lavecchia 2015). Yet, this relative measurement compares a single situation with national average values, and it has been criticized for not taking adequately into account other key elements such as the family size, the under-representation of low-income households living in small and poorly efficient homes in terms of energy, and the level of employment, net of house management costs (Moore 2012).

In this view, recent research insights suggest that single-indicator approaches present some pitfalls for the evaluation and measurement of energy poverty as they could, first, preclude the possibility of alternative interpretations of the nature of causes behind energy poverty, and, secondly, they likely to pre-determine which household profiles are worthy of support, as narrow definitions may exclude certain vulnerable populations (Tirado Herrero 2017). As mentioned earlier, the seek for multi-dimensional and composite indexes grasped the attention of several scholars (see Castaño-Rosa et al. 2019), even fueled by systematic reviews aimed at improving the practical use of energy poverty indicators (Siksnelyte-Butkiene 2021), and ‘metrology’ studies (i.e. the study of the measurement of the phenomena) (Sareen et al. 2020). Insightful examples also come from national cases. In Portugal, the EPVI index – combining socio-economic indicators with building characteristics and energy performance – was tested to map energy poverty at a regional level, addressing space heating and cooling separately (Gouveia, Palma, and Simoes 2019). In Poland, a multidimensional index account for five dimensions: low income-high costs, high actual costs, and three subjective indicators: difficulty to warm home, housing faults, and bills difficulties (Sokołowski, Frankowski, and Lewandowski 2020). Furthermore, data from a crowd-sourced map of energy poverty measures developed by the ENGAGER research network³ provided a comprehensive understanding at the European scale (Bouzarovski, Thomson, and Cornelis 2021). Alongside, qualitative insights and research-action initiatives have also contributed to the incessant debate on energy poverty (Middlemiss et al. 2020; Feenstra et al. 2021).

Tackling energy poverty in an eco-welfare perspective: an initial view

The heterogeneous standpoints and approaches suggest that there are manifold reasons behind the condition of energy poverty: housing, ability to use energy, purchasing power, environmental conditions, etc. To date, institutions have developed responses to protect energy demand, based mainly on three directions: intervention on energy prices, to limit the cost for the final consumer (regulative policies); the activation of policies to safeguard access to energy services for the weakest sections of the population; income support for the most vulnerable people, through energy bonuses (redistribution policies). On the first front, the answer was entrusted to the creation of competitive energy markets, which should have lowered the average costs of energy. The entry into the free market of many companies, however, is not causing a reduction in the price of energy. Investigations by Streimikiene, Bruneckiene, and Cibinskiene (2013) and Poudineh (2019) demonstrate that there is no correlation between the degree of liberalization of the electricity market and energy prices in the different national contexts of Western countries. When it comes to specific policies to protect vulnerable segments of the population, the Energy Authority has for some time intervened with specific measures (payment in instalments, maximum interest rates, prohibition of suspension of the service in cases of hardship) given the goal of protecting the most vulnerable consumers. The electricity and gas bonus instrument, on the other hand, intervenes on the side of income support: it is aimed at integrating consumer spending in conditions of economic hardship or serious health conditions. Those households that find themselves in a condition of economic vulnerability can obtain the electricity and gas bonus. The ‘bonus’ instrument is therefore configured as a downstream response, which increases the purchasing power of households but is not able to affect the quality of consumption. In fact, this instrument does not intervene on the reduction of energy needs, the improvement of the quality of homes and the increase of the capabilities of the weakest, but rather on supporting consumption. However, several European countries have recently introduced these instruments to curb the impact of rising energy prices on households (e.g. Germany, the United Kingdom, France, Denmark, and Poland).⁴

These three types of interventions do not look at the energy transition and the reduction of the energy needs of homes, just as they do not address the problem by trying to trigger social innovation processes

that lead citizens to become energy prosumers (a term blurring the lines between production and consumption activities in the energy systems). In this respect, energy poverty is addressed as an issue related to the purchasing power of consumers. Life contexts and possible solutions that drastically reduce energy needs are not taken into consideration. As such, these policies encourage the growth of energy consumption and they are in conflict with the need to reduce climate-altering emissions (Chakravarty and Tavoni 2013) and atmospheric pollution (Reyes et al. 2019).

The link between classically redistributive policy instruments – such as the energy bonus and forms of income support that allow families to pay their bills – and the growth paradigm is clear. Thus constructed, the redistributive policies incentivize the increase in energy consumption, with negative secondary effects from the point of view of climate-altering emissions and atmospheric pollution. In many cases, thanks to income support side effects, the consumption and the costs to be incurred for energy procurement increase at the same time. Rather, the study of energy poverty through an eco-welfare perspective entails an analysis of many social implications, referred to the interdependencies between poverty – merely intended as a shortage of economic resources – and energy poverty, by involving issues of accessibility and eligibility to specific policies, retrofitting interventions on the dwellings, identification of the most vulnerable populations in the affordability related to energy expenditure, and their ‘capabilities’ as fragile recipients. In other words, the focus on energy poverty through an eco-welfare perspective strives ‘to see energy poverty as a service-oriented issue, or a fundamental human right concern, rather than a fuel or technological issue’ (Sovacool et al. 2012, 718).

Investigating energy poverty through an eco-welfare perspective

Although further insights and reviews of the literature on energy poverty would be deserved, we resume and enhance the need to investigate energy poverty beyond the consolidated, albeit helpful, economic measurements, by also questioning welfare policies and their strict relationship with cycles of wealth distribution among inhabitants. Whilst from an analytical standpoint, the research field that observes eco-social sustainability has reached encouraging results, from the side of the applied research, the empirical implications are still far from being adequately elaborated regarding the capability to build interactions between welfare and environment in a comprehensive analytical structure. Given that energy poverty results from the interplay between a low income and a high cost of heating (Moore 2012), it involves both social and

environmental concerns. According to Dubois (2012), the multifaceted aspect of energy poverty makes public policies in this area necessarily flawed, in the face of processes for targeting policy, identifying households in need, and implementing appropriate measures. Another encouraging field of intervention refers to the improvement of energy efficiency performances of the dwellings. On such basis, the eco-welfare, seen as an emerging research field, bridges the gap between these two kinds of interventions, as it enables to investigate energy poverty by keeping together social issues – i.e. poverty – and environmental concerns, i.e. the negative externalities of energy consumptions on the environment (see Carrosio 2020a).

Moving from this twofold combination, it is possible to envisage novel modalities through which enacts sustainable policies in the provision of an essential welfare service delivered through ‘material’ infrastructures (Foundational Economy Collective 2018), such as energy for domestic use. Against this backdrop, a peculiar research positionality has to be clarified. By drawing upon the introduction, it has to be stated that eco-welfare emerges from the contradiction embedded in the Fordist paradigm, and it takes shape as a response to these contradictions, which attributes a particular centrality to the re-distribution of wealth, rather than constructing welfare systems based upon a pre-distributive rationale. A scheme that illustrates the combination of the issues addressed by the eco-welfare perspective is provided in Figure 3, which highlights the theoretical role of eco-welfare towards the focus on pre-distribution and the integration between both environmental and social determinants of well-being.

Adapted to energy poverty, such a framework leads to questioning and challenging mainstream welfare policies by introducing ‘pre-distributive’ elements (see O’Neill 2020), that entail intervention in the housing stocks, the design of viable solutions to reduce the energy demand by vulnerable households and the study of inhabitants’ capabilities in reaching a fair energy consumption from both the economic and the health viewpoints. These eco-social interventions are meaningful insofar as they combine environmental and social welfare concerns in the field of the energy transition. Many analyses steered this perspective in diverse ways: through investigations on the so-called socio-spatial-determinants of energy poverty, especially in post-communist countries (see Bouzarovski and Tirado Herrero 2017), with ethnographies focused on the micro-level of energy efficiency in Switzerland (Bertho, Sahakian, and Naef 2021), but also with econometric inquiries aimed at identifying and quantifying the most vulnerable inhabitants (Thomson and Snell 2013; Legendre and Ricci,

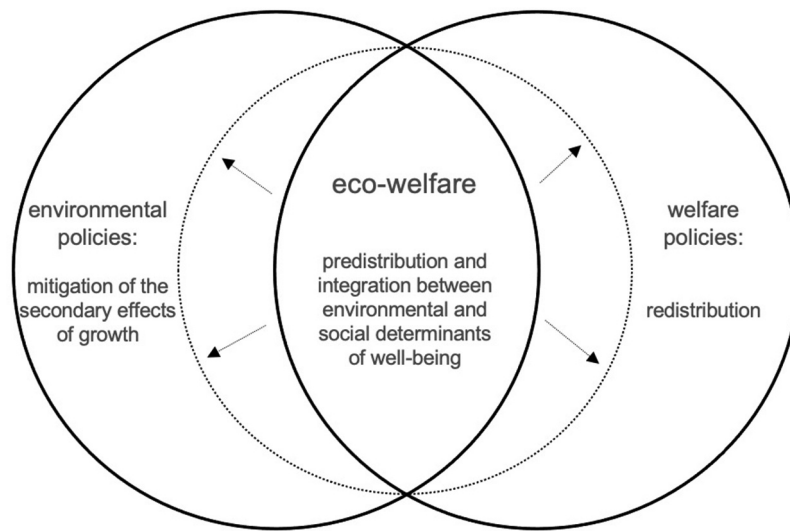


Figure 3. The configuration of eco-welfare between environmental and social policies. own elaboration

2015) as well as at understanding people's ordinary decisions that affect their energy consumption (DellaValle 2019). These determinants involving households' experiences are pivotal, as they acknowledge that those 'on the lowest incomes have usually little room to manoeuvre in their daily budgeting that heating may be regularly sacrificed in favour of other daily needs' (Anderson, White, and Finney 2012, p. 50).

The eco-welfare perspective finds key aspects in these conditions where a cut of consumption looks as the most suitable solution, to contrast the predominance of income-based strategies to contrast energy poverty and to seek more profound solutions able to provide an 'exit strategy' from an energy poverty condition. In addition, the eco-welfare accounts for an issue already enhanced by Bouzarovski (2014, 278): 'the scope of analysis onto a limited set of circumstances (energy costs, non-payment, or health problems) has obscured broader social, economic and cultural implications of a household's inability to access adequate energy services in the home'. Moreover, it has been noticed how many efforts are often 'driven by a consumer protection agenda, rather than aimed at addressing the structural conditions that lead to energy poverty' (Bouzarovski, Petrova, and Sarlamanov 2012, 78).

Concluding remarks

This paper introduced eco-welfare as a conceptual proposal for both research and action, in order to deeply investigate the interdependencies between the environmental crisis and the fiscal crisis of the State, and also to imagine new ways of setting out welfare policies. We conceived eco-welfare as a new 'eco-social'

typology of public policies. We framed these policies as meaningful instruments in introducing a pre-distributive model 'geared towards social welfare and the satisfaction of basic human needs within the environmental limits while deprioritizing economic growth' (Koch 2018, 47). From a theoretical viewpoint, this approach poses the issue of the sustainability of welfare systems in a new analytical framework. First, it questions the environmental sustainability of social policies and at the same time the social sustainability of environmental policies. Second, the eco-welfare perspective wonders how to guarantee well-being and social rights in a decarbonized and post-growth society.

On this basis, we addressed the topic of energy poverty as a valuable starting point to understand these interconnections (see also Thomson, Bouzarovski, and Snell 2017). Energy poverty is a social problem insofar as it affects inequalities, but it can also turn into an environmental problem when policies to contrast energy poverty are merely built according to redistributive principles. Tackling energy poverty only through economic support for consumption or the reduction of energy prices – as redistributive and regulatory policies do – does not allow us to look at the socio-environmental dimensions that are upstream and downstream of this problem. Some works show how income support can translate into an incentive to consume (Filippidis, Tzouvanas, and Chatziantoniou 2021), reproducing the consumption-debt spiral rather than interrupting it. For this reason, the issue of energy poverty enables us to enhance how the eco-welfare framework – and the relevant policy implications about the eco-social policies – can contribute to further applied research purposes. Indeed, energy poverty deserves deeper understanding of its diverse manifestations as well as its social implications

related to households' conditions. First, we may find that, in some cases, it is necessary to intervene on several fronts: by reducing the energy demand through retrofitting initiatives, by changing households' behaviour in energy consumption, by developing specific projects – such as renewable energy communities – that entail a co-production of energy from renewable sources on a local scale, and by improving the presence of public spaces in such a way that people who attend these spaces have a lower energy demand at home. Second, we state that a focus on the living contexts entails issues of housing conditions, economy, and willingness to pay for energy consumption. Simply put the place where fuel poor lives and their capacity to afford energy expenditure against other expenditures play a pivotal role in the study of energy poverty beyond the mere, albeit central, economic understanding. In this view, we find that energy poverty is a problem that resides in the specificity of living conditions, and that can be addressed through place-based actions, even according to the households' standpoint about energy expenditure. In this respect, within the eco-welfare framework, the intervention in energy poverty entails action on the reduction of energy inputs at different levels (from mobility to the use of household appliances), as well as on natural forms of cooling, on the health conditions of buildings, and on households' capabilities, up to collective and participatory forms of energy production and consumption at the local level.

With an eco-welfare approach, issues such as energy poverty are observed with a particular focus on the pre-distributive dimensions, which stand before redistributive devices such as the energy bonus, and act at the same time on environmental sustainability and social equity, inasmuch as they are able to disclose and tackle the negative interdependencies between welfare and environment. Moving from the exploration of the eco-welfare paradigm related to energy poverty, the topic can be broadened to understand how the ecological transition policies linked to the adaptation and contrast of the climate crisis can be socially bent and can become a new vector of production of well-being for people. We intend to explore these connections by continuing with the work of analysis and research, going beyond the theme of energy poverty to address many other areas of connection between social and environmental issues.

Notes

1. According to Barr (2020) it is not a linear relationship that moves from growth to welfare, but a circuit, in which welfare spending also contributes to growth. The fact is that starting from the crisis of the welfare state, most of the national states have considered

welfare as an expense rather than as a tool for development. From this assumption, the policies of downsizing and austerity were born.

2. We can provide two examples relying on existing literature. The first example concerns the policies for the energy retrofit of homes, which can produce 'low carbon gentrification'. The displacement of low-income people and their concentration in urban inner peripheries leads to a deterioration of social conditions (Bouzarovski, Frankowski, and Tirado Herrero 2018). Similarly, the transition to electric cars without massive policies to increase public transport and soft mobility excludes large sections of the population from the right to mobility, with consequences on the possibility of accessing services (Curran and Tyfield 2020).
3. ENGAGER is a research network funded via the European Co-operation in Science and Technology (COST) scheme: <https://www.engager-energy.net/>.
4. Two newspaper articles about the governmental bonuses to support households' energy expenditure: <https://www.euronews.com/next/2022/10/26/energy-bills-are-soaring-in-europe-what-are-countries-doing-to-help-you-pay-them> - <https://www.weforum.org/agenda/2022/09/what-is-the-cost-of-europe-s-energy-crisis/>.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Giovanni Carrosio is Professor in environmental and territorial sociology at the Department of Political and Social Sciences at the University of Trieste, where he teaches Sociology of the Environment and Governance of Networked Systems. His research interests include environmental crisis and local development, and in particular, he studies the social and territorial dimensions of energy transition. He is co-founder and member of the scientific committee of the North Adriatic Summer Institute for Sustainability (Nasi).

Lorenzo De Vidovich is research fellow at the Department of Political and Social Sciences at the University of Trieste, with a PhD in urban studies. His main fields of interest are welfare, eco-welfare and energy transition, energy poverty, and suburbanization. He particularly focuses on the territorial dimensions of welfare policies, and he is also involved in research activities about the spatial implications of COVID-19 pandemic in suburban peripheries.

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