
Article:
Kerr, N, Gillard, R and Middlemiss, L orcid.org/0000-0001-5185-2033 (2019) Politics, problematisation, and policy: a comparative analysis of energy poverty in England, Ireland and France. Energy and Buildings, 194. pp. 191-200. ISSN 0378-7788

https://doi.org/10.1016/j.enbuild.2019.04.002

Politics, problematisation, and policy: a comparative analysis of energy poverty in England, Ireland and France.

Niall Kerr[1]*

Ross Gillard[2]

Lucie Middlemiss[3]

Abstract

Energy poverty, as a social and political issue, is at different stages of development across Europe. Originating in the UK, it is rising up many European political agendas, driven by a range of concurrent issues including: economic recession and inequality, low carbon energy transitions, and changing consumption demands. This article presents analysis of three national approaches to energy poverty in Europe; England, Ireland and France. In comparing these cases, we show how each defines and measures energy poverty differently and how this affects the selection and functioning of different policy solutions. We draw on the conceptual separation of multiple streams theory (politics, problems and policy) to assess the shape of energy poverty on the political agenda of each nation. We consider the *political* context of each nation and show how energy poverty overlaps with other agendas such as: welfare reform, energy market liberalisation and climate change. We review each country's approach to defining the *problem* of energy poverty focusing on how the issue is delineated and measured. In each case, we show how there has been recourse to two broad types of *policy* solution: subsidising energy costs and improving the efficiency of the housing stock. Our analysis reveals interesting similarities (e.g. in the use of affordability and efficiency policies) and differences (e.g. in the versatility of definitions) in addressing the significant levels of inequality in access to energy services among the populations of these three Western European countries.

Keywords

Energy poverty; multiple streams; problematisation; France; England; Ireland

1. Introduction

Energy poverty has emerged onto a number of national agendas, in the last few decades, resulting in much deliberation over how it should be defined, and addressed. At the supranational level the EU

[1] Science Technology and Innovation Studies, University of Edinburgh - Niall.Kerr@ed.ac.uk

[2] Sustainability Research Institute, University of Leeds - R.O.Gillard@leeds.ac.uk

[3] Sustainability Research Institute, University of Leeds - L.K.Middlemiss@leeds.ac.uk

has begun to formalise its own energy poverty agenda, resisting calls for a common definition but acknowledging the issue as a social and political reality. The launch of the EU Energy Poverty Observatory (EPOV) in 2018 is indicative of the interest that the European Commission has in this topic. The availability of data, knowledge and resources through EPOV invites questions about the similarities and differences between member state's existing responses to the issue.

In this article, we draw on the agenda-setting and policy framing literature, in particular Kingdon's 'multiple streams' framework, to consider the problematisation of energy poverty as a political issue. There has been a range of responses to the issue around Europe: energy poverty can be a well-established national policy issue (UK), subject to a growing policy response (France, Ireland), involve initiatives emerging locally where national policy does not exist (the Netherlands, Spain), or not be recognised as a problem altogether (Denmark, Germany). In this paper, we focus on the issue of energy or fuel poverty in three different national contexts – England, France and Ireland circa 2000 – 2018. We chose these three nations, partly because they all have an established energy poverty agenda and dedicated policies, but also because of what we knew of the diversity in their approaches: we were intrigued by the contrasting understandings of the problem these proximate nations had developed.

The case studies of the three nations describe distinct energy poverty agendas. They consider how the 'problem' of energy poverty has been defined, the approach to policy solutions that has been taken and the politics which have shaped both problem and solution framing. This analysis uses multiple streams theoretical separation of *problem*, *policy and politics*, as a sensitizing framework with which to approach our case studies. We also examine how these three elements interact and influence each other, as a means of developing a distinctive understanding of the issue in each nation.

In addition to the multiple streams framework, we draw on the policy studies literature, which emphasises the non-linearity of policymaking: acknowledging the constant overlap and interaction of policy ideas and practices (Cairney, 2012c). Our main contribution to this theoretical literature is to highlight the importance of context and (re)framing, showing how international political and economic factors, and the common challenges of defining and addressing energy poverty, are responded to in each nation.

Section 2 provides a brief overview of 'energy poverty as a political issue', considering it's distinction from generalised poverty and its place on the political agenda in the UK, Ireland, France, and at the European level. In section 3, we set out the framework of multiple streams theory, highlight the importance of issue framing and the potential interaction of policy problems and solutions. Section 4 is comprised of the three case studies, and explores the problematisation, range of policy solutions and the political context that relates to energy poverty. In section 5, we discuss the differences and similarities between the cases and reflect on the importance of the social and political context in each country, as well as identifying common factors that affect how energy poverty is understood and addressed as a political issue.

2. Energy poverty as a political issue in Europe

Energy poverty, when considered as a form of deprivation distinct from income poverty, is conventionally associated with three main causal factors - low income levels, high energy costs, and low levels of domestic energy efficiency (Boardman, 2013). Energy and income poverty are not, however, always conceived of as distinct and have intertwined histories and conceptualisations (Hills, 2011; Middlemiss, 2016). In each of our case study nations, political concern about people

being able to afford to live in adequately warm homes pre-dates the emergence of the terms 'fuel poverty' or 'précarité energetique' (hereafter referred to as energy poverty). For instance, in the UK and Ireland, financial support has been offered by governments to cover the cost of heating since at least as early as the 1940s (Healy, 2003; Boardman, 2013). These policies are an implicit recognition that income poverty and levels of socio-economic inequality are enduring problems affecting households' ability to access basic goods and services that require energy.

Over time, successive political and economic factors have pushed the issue of energy affordability further into the political and public spotlight across Europe. Most recently, the EU-wide effort to reduce greenhouse gas emissions from the energy sector, together with rising wholesale energy prices, have drawn greater attention to the questions of equity in the energy system. This tension has been exacerbated by the economic recession of 2008, with resulting austerity policies and stagnant wages contributing to a 'cost of living crisis' for many households in Western Europe.

The European Union recently launched consultations and research programmes intended to develop a common understanding of energy poverty, indicating that there is now explicit recognition of the widespread problem of energy poverty in Europe. This endeavour to develop coherent monitoring and policy at the EU level (through EPOV) represents an opportunity for sharing best practice and drawing lessons across country contexts. It is in this space that our article intends to offer a contribution; providing comparative qualitative analysis of the potential problem definitions and policy solutions to complement the existing work on quantifying the scale of the problem.

Following earlier work (Kerr et al 2017), which considers the potential for multiple problem streams (climate change, energy poverty,, unemployment, energy security) to interact with a single policy solution stream (energy efficiency), in this paper we outline the multiple, distinct policy problems that are connected to energy poverty in each national context. We then highlight the different approaches to policy solutions that are associated with the issue, as a means of understanding the emergence of energy poverty in each case. In doing so we extend the logic of multiple problems being associated with a single policy solution in earlier work, to consider the interaction between multiple policy problems, policy solutions and broader political drivers.

3. Theoretical framework: comparing the problem, policy and politics streams of different nations

In this analysis, we draw on Kingdon's multiple streams theory of the policy process as a heuristic device, using its categorisation as a sensitising framework with which to analyse the political issue of energy poverty. The multiple streams framework describes how new agendas and policies emerge when a particular problem aligns with appropriate solutions and political actors to create a 'window of opportunity' (Kingdon, 1995). This suggests that problems are addressed when a solution exists that is considered feasible, and when there is sufficient political will to enact it. The theory sets out that such an alignment of *problem*, *solution* and *politics* streams results in the opening of a 'policy window' that can be exploited by 'policy entrepreneurs' who wish to promote their preferred solutions (ibid.).

While the separation of problem, policy and politics is helpful, the need to align these elements in order to produce a policy response ('conditions were right, a window of opportunity opened, and policy was established') is too simple a framework through which to tell the complex and dynamic story of our three cases. This is in part due to the length of time over which our analysis takes place, but also because of the existence of competing and complementary political influences across Europe and within each country. As a result, our analysis involves a less formulaic explanation of

policy formation. We develop a description of how the multiple streams categories co-evolve, interact, and transform over time. Below we briefly introduce some of the literature on issue problematisation and the development of policy solutions, and explain how each plays a distinct, but interrelated, role in the agenda of energy poverty.

3.1. Problematisation and the importance of framing

Our explanation of the problematisation of energy poverty, focuses on the agenda-setting stage of the policy process. We acknowledge the non-sequential nature of the policy process, and that any particular 'agenda' is likely to be simultaneously implemented and influenced. Within government, the policy process is often conceived of as a sequential cycle with discrete stages (see for example HM Treasury, 2003). This is, however, a simplistic abstraction of what, in reality, is a complex and messy process, with multiple opportunities for feedback between stages (Cairney, 2012c).

Political and public attention is finite, and there is limited space for issues to co-exist and share prominence on the political agenda (Tosun, Biesenbender, & Schulze, 2015). The number of potential issues greatly exceeds the capacity of decision making institutions to process them (Cobb, Ross, & Ross, 1976). Decision makers' cognitive limitations, also known as their 'bounded rationality', is seen as a "fundamental part of most political theories of public policy making" (Cairney, 2012b).

Further, some authors distinguish between a public agenda and a formal political agenda. Cobb et al (1976) consider the public agenda as issues that receive "widespread attention" and the formal agenda as that receiving attention from political decision-makers. The tangibility - the level of direct relevance of an issue to the general public - and the language or perceived degree of technical knowledge required to understand an issue, can all influence the likelihood of particular issues being propelled by public opinion onto the formal political agenda (Cairney, 2012b). The direct relevance of domestic energy use to every household, casts energy poverty as a political issue that is unmistakably tangible to a wider public.

The definition and framing of issues is critical to their emergence and positioning in both public and political agendas (Baumgartner & Jones, 1991; Cairney, 2012c). The discursive framing of issues exerts an influence on decisions and policy throughout their lifetime, although framings may change over time. For instance, long-standing issues such as socio-economic inequality or energy system transition will wax and wane on political agendas, in accordance with their resonance to other social and political discourses and agendas. Ultimately, framing an issue, defining what constitutes it's relevant parts, provides the key political 'terms of reference' for articulating a problem and responding to it.

The framing of a policy issue entails the selection, organisation and interpretation of a limited amount of information as a means of making sense of complex reality (Nilsson, 2005), something that interpretivist scholars have analysed in many different contexts (Fischer, 2003). Shim et al (2015), for example, consider the extent to which the issue of nuclear energy sees different emphases on the framings of security, clean energy, and nuclear safety in different political contexts. Stokes & Warshaw (2017) consider the influence of policy framing on public opinion with respect to renewable energy policy i.e. how much emphasis is put on the issue affecting jobs, local pollution or combating climate change. Different framings of policy learning processes, monitoring and evaluation, can also contain different objectives, assumptions and prescriptions (Nilsson, 2005). Ultimately, framings are a mix of purposively selected facts and figures, and emotive appeals to moral positions and the tangible aspects of a particular issue (Cairney, 2012b).

Given the multi-faceted nature of energy poverty (Meyer et al., 2018; Middlemiss et al. 2018), principally through its connection with a wide range of other social and political issues (e.g. poverty, health, climate change, energy efficiency, aging population, access to decent housing), it is not surprising that the issue can be framed and problematized in a number of ways. According to the logic of multiple streams theory, the framing of an issue needs to successfully connect with both the political context, and the different possible solutions that exist to resolve the problem. The upshot is the potential for energy poverty to be defined differently in different nations, at different times, and at different scales of public authority.

Income poverty - a more established issue on political and public agendas in Europe than energy poverty - provides a useful point of comparison. The movement of income poverty to a more prominent place on some countries' political agendas is thought to be connected to a change in the 'causal story' (Stone, 1989) with which it is attached and also with wider political factors such as the establishing of a welfare state e.g. changing poverty from being an issue of private to public responsibility (Cairney, 2012b). A problem's current, and historical, causal story can be analysed to help explain the existence and the form of policy interventions that are adopted.

3.2. Matching policies to problems

In the policy studies literature, it is well established that the policy process is not ordinarily a linear, sequential process of problem identification followed by a decision on appropriate solutions (Cairney, 2012; Cooper-Searle et al., 2018; Jordan et al., 2015). Indeed, policies (or the solution stream in MS theory) are conceptualised as a 'soup', 'pool', or 'trash can' of ideas developed by specialists within their area, which are ready to be actioned when called upon. Some authors (Zahariadis, 1999) make a distinction between 'consequential' coupling of streams, where a problem emerges, and a solution is sought, and 'doctrinal' coupling, where "solutions chase problems to which they can be attached" e.g. driven by ideological commitments and politicians looking to make their mark (Kingdon, 1995). This distinction lies at the heart of multiple streams theory, which states that there is not necessarily a linear (consequential) process of problem stream identification followed by the search for a solution.

In the context of energy poverty, this article identifies two primary areas where public policy directly attempts to provide solutions, namely affordability policy - reducing the proportion of income households need to spend on energy - and efficiency policy - retrofitting dwellings to make them more energy efficient. Each of these addresses one or more of the three main drivers of energy poverty. They also, however, simultaneously address other related political issues e.g. income poverty, climate change, decent housing, public health. In lieu of a full description of all potential policy solutions, and their linkages with different political agendas, in this analysis we provide a summary of the two main overarching approaches to policy solution: reducing energy costs (affordability policy) and improving energy efficiency (efficiency policy).

A household's energy costs are the result of a wide variety of global and local factors, including: supply sources, interconnected grid systems, and domestic markets. The extent to which national governments and international organisations are willing, or able, to intervene in these areas varies. Concerns around energy prices is a feature of some political agendas, especially as many nations face uncertainties associated with security of supply and the costs of transitioning towards more low-carbon energy systems. While many policy decisions can affect the price of energy, equity concerns are often secondary to technical and political priorities, leading to calls for fairer ways of distributing the costs of energy provision (Barrett et al., 2018). Following energy sector privatisation in many countries, some national governments are now less able to intervene directly to 'set prices'.

Although, to some extent this still happens under the auspices of energy sector regulators that have the power to control or 'cap' prices for certain types of consumer (e.g. those on prepayment meters). More typically, countries will use systems of energy cost subsidisation for energy poor households: whether directly as a rebate on their energy bills or indirectly as part of broader income support payments.

It is also common to see a range of policies addressing the energy efficiency standards of new buildings and for retrofitting existing buildings. Support for this type of solution is driven by a variety of different rationales e.g. alleviating energy poverty, reducing carbon emissions and improving the health of occupants (Kerr et al., 2017). More stringent energy standards for new buildings can be politicised, by perceptions that they increase construction costs. With regards to retrofitting existing buildings, many different policy instruments exist to incentivise owner occupiers and landlords to invest in efficiency improvements e.g. financial incentives or regulations. Again, the funding and functioning of these different instruments will involve political scrutiny and can be interpreted or framed differently - in terms of cost-efficiency, equity, emissions savings - depending on the particular perspective.

4. A comparative analysis of England, Ireland and France

This section considers the issue of energy poverty in three countries (England, Ireland and France), where it has been established on the political agenda for some time. We structure our analysis by first setting the scene in each case, considering the broader socio-political and economic issues that intersect with energy poverty. We then address how energy poverty has been 'problematised' in each country, (i.e. outlining its 'causal story'). Finally, we consider the policy solutions that have been adopted in each country. For the sake of comparison, policy instruments specifically aimed at tackling energy poverty are sorted into two categories, those that address energy *affordability* and those that seek to improve the energy *efficiency* of domestic buildings. These cases are necessarily concise, and clearly not exhaustive, but they offer sufficient detail to provide interesting points of comparison and analysis.

4.1. England (within the UK context)

4.1.1 Politics

For successive UK governments, energy poverty has been seen as a costly social problem (both politically and economically) as it leads to unacceptable living conditions and ill health for millions of households. Under a Labour Government (centre left), in 2001, the first national fuel poverty strategy was launched with a resounding target to 'end the blight of fuel poverty for vulnerable households by 2010… and all households by 2016' (Inter-Ministerial Group on Fuel Poverty, 2001: p1). A semi-independent Fuel Poverty Advisory Group was also established to monitor policy progress and provide advice to policymakers, keeping the issue on the political agenda.

Subsequently, after missing these targets, domestic energy efficiency standards became the new indicator by which success would be measured. The use of long-term targets broken down into 5-yearly stages chimes with the UK's approach to reducing greenhouse gas emissions and raises interesting political questions about the overlap between these agendas as well as questions about the political legitimacy of target setting over multiple administrations (Rutter and Knighton, 2012).

The interplay between climate change and energy poverty was thrown into the political spotlight in the run up to the 2015 general election. Domestic energy prices had spiked at a time of austerity and all energy policy costs were being closely scrutinised. The impact of this political pressure was evident in two flagship policy decisions in England: the introduction of a price cap on tariffs for

vulnerable consumers (BEIS, 2017), and a reduction in the overall budget for energy efficiency improvements (but a relative increase for the amount available to the energy poor) (DECC, 2016a). Similarly, welfare payments for energy such as the Winter Fuel Payment (see below) were criticised for being poorly targeted and costing too much (£2-3 billion per year) (Thurley and Kennedy, 2017). However making cuts to this policy was less politically feasible and became a partisan issue that divided politicians.

Finally, in terms of energy poverty's place on the public and political agendas, the recession and austerity-driven cuts to policies drew attention to the 'cost of living crisis' facing many low-income households in the UK. A powerful frame linking this to energy poverty is the 'heat or eat dilemma', succinctly describing the budgetary trade-offs and desperate measures that many households face (Snell & Lambie-Mumford, 2017). Significant growth in the use of foodbanks in the UK added further media and public attention to this issue, with discourses harkening back to the moral overtones of the first national strategy's description of energy poverty as a 'blight on society'

4.1.2. Problematisation

Energy poverty as a particular form of poverty emerged in the UK in the 1980s. Following Boardman (1991), the three main causal 'problems' were identified as low incomes, inefficient housing and high energy prices. Separately these issues had all been of concern for some time, but the discursive practice of using the term 'fuel poverty' (hereafter 'energy poverty') to describe their intersection created a new, distinct, policy problem - at the heart of which is the inability to access adequate thermal comfort (Simcock et al., 2016).

Based on World Health Organisation guidelines, and economic modelling of incomes and housing costs, the first official definition declared a household to be energy poor if it 'had to spending 10% or more of income to achieve adequate warmth' (Inter-Ministerial Group on Fuel Poverty, 2001: p6). This placed *thermal comfort* and *household budgets* as the primary indicators: accepting that when these conditions were not met, the consequences for a households' quality of life were severe and highly visible. Since then, annual statistics of the number of households in energy poverty and the number of 'excess winter deaths' related to cold homes have been recorded and act as a regular reminder of the persistence and gravity of the problem.

After missing the 2010 target, and being on course to miss the 2016 target, to eradicate energy poverty, the then Coalition Government (centre left-centre right) commissioned an expert review to reassess the problem (see: Hills, 2012), ultimately choosing to revise the official definition of energy poverty and set new targets for England and Wales (DECC, 2015). Although they are undoubtedly more sophisticated, the new 'low income high cost' and 'fuel poverty gap' measures are both based on relative medians, effectively dampening any quantifiable effect of changes in energy prices, incomes and policy interventions (Middlemiss, 2017) i.e. accepting that inequality in energy affordability will always be present.

One aspect of the original problematisation that remained in the revised definition in England was the recognition of health impacts and inequalities. The Marmot review (Marmot Review Team, 2011) strengthened and reiterated the evidence of negative health impacts of cold homes, especially for certain demographics such as older people, young children and those with long-term illnesses or disabilities. This lends an explicitly moral overtone to discussions about the problem of energy poverty and deciding how to direct limited policy resources.

4.1.3. Policy solutions

There has been an observable shift in the framing of national energy poverty strategies in England. All three underlying causes, and their negative consequences, have been present throughout, but the policymaking emphasis has moved from direct financial support towards an emphasis on: improving domestic energy efficiency through retrofit regulations and incentives, and individual behaviour change; and keeping energy prices low (through market interventions and consumer empowerment).

The underlying concern with inadequate thermal comfort and the negative health impacts of cold homes is evident in the majority of the specific policies discussed below. It was also formalised in a quality standard for the health and care sector, providing a set of guidelines for 'preventing excess winter deaths and illness associated with cold homes' (NICE, 2015).

Welfare payments to help vulnerable households pay for energy were first standardised in the UK in 1986 with the introduction of a Cold Weather Payment. During periods of cold weather, payments were automatically made through existing benefits channels to older people, families with young children and people with disabilities or long-term illnesses – reflecting the above mentioned consensus about who was most vulnerable to the negative health impacts of cold homes (Kennedy, 2010). In 1997 the Winter Fuel Payment was added, giving an annual sum to everyone over the age of 60 and in receipt of a State Pension or other specific benefits; again based on the assumption that older people are most at risk, especially if they rely on static benefits-based incomes (DWP, 2015).

These direct financial payments remain in place today and, in 2011, were joined by the Warm Home Discount; an annual rebate of £140 on energy bills for eligible households. Again the priority group was pensioners on basic state incomes (who receive the rebate automatically). Low-income households or those in receipt of certain benefits are also eligible but have to apply through their energy supplier. Two significant problems arise from the private sector governance of this policy. First, energy company discretion over eligibility criteria leads to a lack of clarity and low uptake among the most vulnerable (Hough, 2016). Second, 70% of rebates initially took the form of debt relief; meaning energy companies deducted the rebate from outstanding debts, leaving households' expendable income unaltered (DECC, 2016).

Warm Front (2000-2013) was a taxpayer-funded grant providing retrofit measures for low-income households. During its lifespan, the UK government spent £3.2bn on heating and insulation improvements, enjoying high levels of uptake and overwhelmingly positive reviews from recipients (DECC, 2014; Sovacool, 2015). However, due to concerns about targeting, the eligibility criteria were gradually tightened (NAO, 2009) as policymakers 'had the impression that some recipients may have been able to fund the measures themselves' (DECC, 2014: 10). Finally, as a result of cuts to departmental spending in order to tackle the growing public finance deficit (DECC, 2010) this policy was scrapped.

Pre-dating and outlasting Warm Front, energy supplier obligations have been the policy of choice in the UK, especially in England (running continuously in various forms since 1994). In this market-based mechanism, governments set retrofit targets (backed by economic sanctions) that energy companies must meet. The down-side of this private sector governance arrangement became clear when the first phase of the Energy Company Obligation (2013-2016) failed to reach households living in very poor quality dwellings because they needed expensive retrofit measures, leading the government's Energy and Climate Change Committee to conclude that 'having energy companies control most of the funding has not been beneficial for those in fuel poverty, hard to reach and low-income households' (Hough and Page, 2015). Such targeting failures are particularly problematic for

this sort of policy because it is regressively funded through energy bill levies i.e. exacerbating one of the main causes of energy poverty. Despite these drawbacks, ECO remains the flagship policy for tackling energy poverty in England. Whereas the other nations of the UK (Scotland, Wales and Northern Ireland) all commit public funding for supplementary policies within their own borders.

The level of people in energy poverty according to the Low Income High Cost measure has changed very little between 2003 – 2016. As highlighted by the relevant government department this lack of movement is due to the relative nature of the measure. The previous measure (relative income) had seen the number of households in energy poverty gradually increasing over time up to the change in metric in 2010.

4.2. Ireland

4.2.1. Politics

Ireland has, until recently, been seen as one of only two EU states (alongside the UK) where energy poverty is firmly recognised on the political agenda, with this prevalence thought to emanate from the specifics of inequality and the nature of the housing stock in these countries (Bouzarovski, 2014). In Ireland, government policy documents routinely observe that no one government department is responsible for energy poverty and that a cross-governmental approach is needed (DCENR, 2009, 2011; SEI, 2003). Various 'arms-length' groups are also involved with assessment of the issue and its potential solutions. Since 2002, the Sustainable Energy Authority Ireland (SEAI) has been partly responsible for developing energy poverty policy and strategy. In 2007, an Inter Departmental/Inter Agency Group, chaired by the Office of Social Inclusion, was formed to oversee and drive coordinated delivery of all energy poverty initiatives and programmes (DCMNR, 2007). The government currently defers to an Energy Poverty Advisory group to develop an "appropriate methodology for measuring and tracking energy poverty in Ireland" (DCENR, 2016).

The energy retail sector has been subject to the forces of liberalisation since 1999 with the Electricity Regulation Act (Mccarthy, 2005). The attempt to increase competition has resulted in a mix of public and private companies sharing the electricity and gas markets. The 95% state-owned, commercial electricity company ESB, has around 50% of domestic electricity consumers with this number gradually decreasing from 100% since 2009. The previously state-owned Bord Gáis (sold in 2014) has the second largest stake (16%) in the electricity market and about 50% of the gas market (CER, 2017). The sale of Bord Gáis was a result of the conditions of the austerity bailout that significantly affected the Irish economy and other utility services in the wake of the 2008 financial crisis (Hearne, 2015; RTE, 2012).

Funds for energy poverty policy mainly come from central government revenue. The Fianna Fail/Green coalition government introduced a carbon tax in 2010, which applied to various domestic fuels (DoF, 2010). There were initially plans to create a voucher scheme to compensate low-income families for the inflationary impacts of the carbon tax, but these were scrapped (Smyth, 2010). At the time of the introduction of the tax, the increase in efficiency spending was branded as a form of compensation for the energy poor of the impacts of the new tax (Convery, 2013).

Public funds for improving home energy efficiency spending took off in 2003 with a fund ring-fenced for priority social groups. The overall spend from the programme was expanded significantly in 2009/2010. Whilst some of the fund remained dedicated to priority social groups, the majority was now available universally (SEAI, 2004, 2010). In recent years, the low income and universal funds have been at comparable levels. The universal availability of some of the public funds for efficiency

relate to the connection between home energy efficiency and the additional political issue of climate change. The expansion in funding in 2009/10 was also partly seen as means of supporting employment at a time of recession (Kerr et al., 2017).

4.2.2. Problematisation

The definition of energy poverty in Ireland has shifted over time. In 2003 the SEAI 'Review of Fuel Poverty and Low Income Housing' (RFPLIH) used the definition of "…the inability to heat one's home to an adequate temperature" and drew attention to "low income and poor housing" as the causes. Some consideration was given to other energy services i.e. "lighting, cooking and other appliance use."(SEI, 2003). This description is not seen as definitive and reference is made to alternative ways in which energy poverty can be defined and measured.

In 2007, the National Action Plan for Social Inclusion 2007 - 2016 (NAPSI) focuses on warmth in its description and stresses the role of "the energy inefficiency of the home" (Irish Government, 2007). By 2009, and Ireland's first 'National Energy Efficiency Action Plan'(NEEAP) multiple energy services were again considered as relevant with the NEEAP highlighting that previous definitions had overlooked other domestic energy services and also making reference to the possible inclusion of transport fuels (DCENR, 2009). Like the RFPLIH, the NEEAP refers to the multiple means by which fuel poverty can be defined and measured, and provides some longitudinal data of fuel poverty levels in Ireland according to both an income and a subjective metric.

The 2011 Affordable Energy Strategy (AES) (DCENR, 2011), uses the term energy poverty rather than fuel poverty, maintaining the emphasis on an acceptable level of multiple energy services. The AES entails the "first Government strategy" specifically on energy poverty, and observes that "up to now … government departments and agencies have focused on delivering on discrete policy remits; this strategy changes this approach" The AES introduces a '*preliminary*' means of measuring energy poverty related to energy spend relative to income i.e. greater than 10% annually. This approach is, however, recognised as not fully appropriate and so levels of severe (over 15%) and extreme (over 20%) energy poverty are also included. This approach is ultimately seen as an interim solution with a more 'comprehensive measure' and modelling framework to be developed over the "next 3 – 5 years" (2011 – 2016). The report also includes a subjective measure (via household surveys) to estimate levels of energy poverty.

The 2016 Energy Poverty Strategy (DCENR, 2016) continued the use of an 'expenditure method' from the 2011 AES, but as with the AES it included descriptions of other potential means of determining energy poverty levels. The lack of development on measurement and modelling was attributed to "unprecedented economic challenges" and a belief that limited resources were "best focused on programme delivery", as well as a lack of consensus on the most appropriate alternative approach.

In Ireland, there has been a recognition that the issue of energy poverty applies to all energy services and not just warmth. Aside from this consensus, problem definition has generally entailed an openness to how the issue should be conceptualised, with routine reporting of the multiple potential means of defining and quantifying energy poverty. This relatively open approach has existed alongside an absence of specific targets for the removal of households from energy poverty, although levels of energy poverty are tracked by the Central Statistics Office (DCENR, 2016).

4.2.3. Policy solutions

Social welfare payments and national anti-poverty strategies have been highlighted as an important component of the government response to energy poverty since the RFPLIH in 2003 (DCMNR, 2007; SEI, 2003). Income support policy is still seen as playing a "very important role in limiting the effects of energy poverty in Ireland" (DCENR, 2016). The National Action Plan for Social Inclusion (Irish Government, 2007) is also seen as the appropriate framework for addressing energy poverty (DCMNR, 2007), and even the NEEAP 2009 refers to the role of income poverty as "undoubtedly a significant factor... in meeting energy costs".

Whilst highlighting the relevance of the general social welfare system in providing income support, a "dedicated specific allowance" (energy subsidisation) is also identified as playing a key role in addressing energy poverty (DCMNR, 2007; Irish Government, 2007). In early 2000s, 'fuel allowances' comprised about a quarter of all income supplement expenditure (Healy, 2003; Scott, Lyons, Keane, Mccarthy, & Tol, 2008). Eligibility for the allowances is broad, with individuals in receipt of other forms of state benefits such as a pension, jobseekers allowance, disability allowance, able to apply for the subsidy.

The subsidies have involved the expenditure of hundreds of millions of Euros annually since the early 2000s. Allowance eligibility was loosened in 2007 with an estimated €329 million spent in that year (Scott et al., 2008). By 2011 total subsidisation was €465 million (Scheer, 2013).

Policy documents and associated grey literature however, have in recent years advocated an increased emphasis on home efficiency improvements within energy poverty policy (DCENR, 2011, 2016; Scheer, 2013). Energy efficiency improvements are seen as "the single most cost-effective means" of dealing with energy poverty (DCENR, 2011) with NEEAPs (DCENR, 2009, 2012) used to outline the contribution of residential energy efficiency schemes to addressing energy poverty.

Levels of spending on efficiency have been a small fraction of that spent on subsidising the cost of energy. In 2007, roughly €4 million was spent on efficiency retrofit for the fuel poor. The amount increased between 2009-10 with expenditure hovering between €20-30 million from 2010 to 2015. Funding to improve the efficiency of fuel poor dwellings has therefore moved from around 1% of energy subsidisation payments to around 5-6%. Funding mainly comes from general taxation with a system of energy supplier obligation also introduced in 2014 (SEAI, 2014).

The "overarching objective" of the 2011 AES approach was a "focus on ensuring the energy efficiency performance of the housing stock is improved" (DCENR, 2011). The 2016 Energy Poverty Strategy again foregrounds the role of energy efficiency. Energy affordability subsidisation is essentially given a secondary, complementary role to efficiency. The social welfare system was, however, still viewed as playing a central role in addressing the issue. The AES states that although the Government has some ability to regulate energy suppliers energy prices are largely out of government control.

The multiple metrics identified in Ireland mean it is difficult to track how the number of households in energy poverty has changed over time in response to government policy. According to a subjective metric ('Households reporting that they cannot afford to heat their homes adequately') the number of households in energy poverty was around 4% from 2003 – 2008 (DCENR, 2016) and gradually rose between 2008 – 2012, from about 4% to 8% (DCENR, 2015). Other subjective and

objective measurements (e.g. in arrears on bills) record a similar trend but often at higher levels (persons in arrears on bills from 8% in 2004 to 15% in 2012) (Watson & Maitre, 2015).

4.3. France

4.3.1. Politics

While French policy has clearly followed developments in English policy, for instance adding an LIHC inspired indicator following the Hills review, it has very much adapted rather than adopted this. The French politics of energy poverty belies a deliberately nuanced understanding of the problem, as well as a critical distance to the concept itself. In France, the institution tasked with managing and monitoring energy poverty (*Observatoire National de la Précarité Energétique*, or ONPE), accepts that according to its data there is no clear distinction between poverty and energy poverty (2014). ONPE suggests that the concept might be an institutional construction to allow us to aim policy at the building stock, as opposed to a characterisation of a particular body of people (ibid.).

So why has this problem attracted explicit legislation in recent years? Le Roux argues that this is a function of rising energy prices, especially electricity prices, and the 2008 financial crisis, which have brought the problem in to sharper relief (2014a). The ONPE attributes this to the rising cost of living (including energy and renovations), and peri-urban spread (2014). More left wing commentators see energy poverty as a symptom of the liberalisation of the energy markets (Le Roux, 2014a), and certainly the legislation on energy poverty is concurrent with liberalisation.

Both the liberalisation of the energy market, and new governance models based on public-private partnership, have been particularly challenging in France given what Bafoil et al call the "extreme valorisation of the central state" (Bafoil et al., 2014). There was considerable opposition to liberalisation, which emerged somewhat reluctantly in the context of EU competition law (Le Roux, 2014a). Energy provision is seen as a natural function of the state (*Service d'intérêt général*), and liberalisation has necessitated citizens becoming more actively involved in the energy market (Le Roux, 2014b). Another new set of actors are local authorities, which now play a larger role as a result of both liberalisation and decentralisation (le Roux, 2014b). The decentralised '*Habiter mieux*', detailed below, is rather radical in this regard.

Another driver for this agenda in France has been the connection with environmental issues, with the legislation known as *Grenelle 2* which addresses energy poverty (passed in 2010), for instance, primarily concerned with carbon emissions reduction. *Grenelle 2*, links the energy poverty and carbon emissions reduction agendas together through the concept of sustainable development. Le Roux sees this legislation as a shift in discourse, from understanding energy poverty as a social to an environmental issue (Le Roux, 2014a).

4.3.2. Problematisation

The French definition of energy poverty is similar to the English definition: *Grenelle 2* defines this as when a household "experiences difficulties in accessing the levels of energy necessary to fulfil its basic needs as a result of inadequate resources, or as a result of the condition of the dwelling" (ONPE, 2014, translated by authors). *Grenelle 2* marks the shift in France from an understanding of energy poverty as a manifestation of poverty more generally (European Fuel Poverty and Energy Efficiency Project (EPEE), 2009; Devalière and Teissier, 2014), to an understanding of energy poverty as a distinct problem in its own right. There are actually two concepts of energy poverty in France: 'précarité énergétique' and 'pauvreté énergétique', the latter referring to households who face more substantial challenges in accessing energy services. The French have a commitment in law to a

right to access energy (Amorce et al., 2005), and a related understanding of energy services as a necessity. French policy therefore aims to eradicate this 'scourge' to society, indeed the ONPE's mission is to: "quickly and efficiently eradicate this growing phenomenon" (2014: 3).

Energy poverty in France is conceptualised broadly, both in relation to the challenges and drivers associated with energy poverty, as well as with regards appropriate indicators and actions to address it. For instance, in France most authors (whether academics, policy-makers or practitioners) refer to impacts on a range of energy services for those affected by energy poverty. This frequently includes electricity for housework and lighting (Amorce et al., 2005; ONPE, 2014), and notably mobility, which, although absent from Grenelle 2, is considered key to future plans of the ONPE (Jouffe and Massot, 2013; ONPE, 2014). Energy poverty is also defined more broadly from a political perspective. Even the definition of the three familiar 'drivers' is more extensive, including both economic and social circumstances of the household, and a breakdown of issues relating to 'energy costs': "the social and economic situation of a household (cyclical or structural), the state of the dwelling and its energy efficiency, and the household's energy supply (including access, cost and quality issues)" (ONPE, 2014, p.9, translated by authors).

Such a broad understanding of the problem, results in a need for a range of indicators to measure the extent and nature of fuel poverty. For the purposes of managing the problem, the French use a 'basket' of indicators (ONPE, 2014). Initially inspired by UK indicators, the French used both the 10% measure (calibrated for different household sizes) and a subjective measure (people reported to be feeling the cold). More recently, following the Hills review, an adapted version of the LIHC measure was also added (in French "*bas revenu dépenses élevées*" or BRDE). This 'basket of indicators' approach was chosen after research on an extensive housing survey conducted in 2006, testing a variety of possible indicators, found a complex picture with different forms of fuel poverty experienced by different demographics (Devalière and Teissier, 2014). As Devalière and Teissier elaborate, different types of people reported different symptoms of fuel poverty: excessive use of energy due to heat loss from buildings or faulty appliances, an increasing share of the household budget going on energy, restricting the use of heating, or feeling cold in one's home (2014). In the face of this complexity, and particularly as a result of the understanding that different populations of people were affected by each of these problems, it seemed impossible to settle on one indicator (Imbert et al., 2016). In more recent work, there is also a recognition that people affected by mobility poverty represent a fourth population (more wealthy and more rural than those affected by fuel poverty in the household) (ONPE, 2014).

4.3.3. Policy solutions

The governance of energy poverty in France is coordinated through the ONPE created after *Grenelle 2*. This is a public private partnership, funded jointly by government (Observatoire for poverty and social exclusion, and the environment agency) and by the three large energy companies (ONPE, 2014). GDF and EDF, which were previously the nationalised energy suppliers, have the biggest social obligation, and contribute the most to the measures financed by energy companies below. ONPE also includes third sector partners on its committee (e.g. *Fondation Abbé Pierre*, a poverty charity). In an early position statement on this topic a group of charities called for a coordinated response, given the multi-faceted nature of this problem (Amorce et al., 2005). Judging by the governance structure of ONPE this advice seems to have been heeded.

Just as in the other nations, there are two means of addressing this policy problem: through increasing affordability or through increasing energy efficiency. Affordability measures include:

1. Until recently social tariffs for gas and electricity (*TPN* and *TSS*) were available to low-income households, funded by a levy on energy bills (Tyszler et al., 2013; ONPE, 2014) these were superceded in 2017 by the *Chèque Energie* which gives an average of €150 per year per household (Droit à l'Energie SOS FUTUR, 2018).
2. help with energy debts for low-income households (*Fonds de Solidarité Logement*), co-funded by local authorities, social landlords and energy companies (Tyszler et al., 2013; ONPE, 2014), 150K households benefitted from this help in 2014 (Droit à l'Energie SOS FUTUR, 2018);
3. a supplementary benefit towards utility bills for low and middle-income households (*Allocation pour le logement*) funded by central government (Tyszler et al., 2013).

Note that the third measure has by far the biggest monetary worth of these three measures, with a yearly cost of €15.9 billion. The fact that both second and third measures are at least partly funded by the taxpayer is significant, and results in a more equitable distribution of costs than the first, which relies on levies on bills. The reliance on nuclear power in France, is a particular threat to energy costs, particularly with regards the cost of disposing of nuclear waste which is collected through a levy on energy bills (5% in 2013; Tyszler et al., 2013).

Efficiency measures include:

1. energy company obligations (*certificats d'économies d'énergie*) to deliver efficiency measures to households (funded by energy producers) (Tyszler et al., 2013; ONPE, 2014);
2. loans to individuals and to social housing associations for energy efficiency measures (including *Eco-pret logement social*, which comprises a low interest loan to social housing landlords) (Tyszler et al., 2013);
3. Habiter Mieux: a locally rolled out renovation programme for low income homeowners, and some private rented properties. This is funded jointly between state and energy companies, and consists of a grant and a low-interest loan depending on eligibility (Tyszler et al., 2013; ONPE, 2014). By 2016, 40k households had been treated under this programme (Droit à l'Energie SOS FUTUR, 2018).

The EU Energy Poverty Observatory records the relative number of households in France that state that they are not able to adequately heat their home. Over the years 2004-16 this level changes very little, fluctuating predominantly around 6%, going as low as 4.6% and as high as 7.3%

5. Discussion

The three case studies summarise the way in which England, Ireland and France define the problem of energy poverty, which policy solutions they offer, and how the issue is linked with other political agendas. This analysis was framed using the separation of politics, problem and policy from Kingdon's 'multiple streams' approach and its attendant theory of how policy areas are established: problems are addressed when a solution exists that is considered feasible, and when there is sufficient political will to enact it. Given our analysis covers a relatively long period of time (2000-2017) we move beyond the topic of agenda setting, to consider the evolution of the energy poverty issue on the political agenda over time. The key insights from this analysis relate to each of the three concepts in turn (politics, problematisation and policies), and to their interactions.

There are clearly some common external political and economic forces that affect the energy poverty issue, but which do so differently in each policy context. The forces include the deregulation and competition agenda, driven by the EU, that has seen a liberalisation of energy markets, the financial crisis of 2008 and the resultant adaptations to public spending and public ownership, and

599 the further emergence of environmental sustainability and climate change mitigation policies. Each
600 of these forces has influenced the development of energy poverty as a political issue - affecting how
601 it is problematised and what approaches are taken to policy solutions.

602 Each country has to some extent been subject to energy market liberalisation in our period of
603 interest. England is seen as a pioneer of liberalisation and has the longest history and the deepest
604 infiltration of free market characteristics of our case studies. In France the liberalisation agenda has
605 been met with more resistance, in part as a result of the greater emphasis on *energy as a*
606 *fundamental and basic need*, and the perceived importance of the state as a provider of *energy as a*
607 *service*. Market liberalisation has proceeded more slowly, and there is continued domination of the
608 market by EDF and GDF. In Ireland, market liberalisation progressed much later than in England but
609 in recent years has seen a growing market share taken by private firms. This change has in large part
610 resulted from the austerity conditions that followed the financial crisis, and the selling-off of parts of
611 the state-owned energy company.

612 These differing governance characteristics have implications for policy related to energy poverty.
613 Efficiency policy in England is to a large extent administered by private energy firms; a system that is
614 routinely criticised with respect to its targeting of energy poor households. In France, both efficiency
615 and affordability policy are only partly funded through energy supplier obligations, with central
616 government footing the rest of the bill. While in Ireland, central taxation is largely responsible for
617 affordability and efficiency policy with energy supplier obligations only introduced in 2014 (the same
618 year as the sale of Bord Gáis). Hypothecated funds for efficiency policy have faced political
619 objections in both the England (ESOs) and Ireland (carbon tax). The source of policy funding can have
620 a big impact on governments' abilities to change total spending on the policy area: if funds are solely
621 raised from energy companies investment in solving energy poverty is limited by concerns about the
622 regressive impacts on energy bills.

623 Whilst the financial crisis experience was different in each country, each went through a period of
624 some recession. Although the financial crisis in Ireland deeply affected general government spending
625 (and ultimately government interaction with energy retail markets), it did not negatively affect the
626 budgets of direct energy poverty policy. Both affordability and efficiency policies saw their budgets
627 increase in a period of otherwise significant austerity. Efficiency policy in England has, however,
628 since been scaled back, partly due to its perceived inflationary impact on energy bills for households
629 during a 'cost of living crisis'. Although, these cuts were not directed at the ring-fenced energy
630 poverty portion of the fund, which actually increased in absolute and relative terms. One
631 explanation for this is the waning salience of climate change on the political agenda in the UK, which
632 meant policymakers could cut expenditure on emissions reducing policies such as domestic energy
633 efficiency (Gillard, 2016). The fact that these policies have been rhetorically and financially
634 redirected towards focussing on tackling energy poverty is testimony to the continued political
635 salience of the issue and its ability to remain a priority despite the loss of overlapping policy goals
636 and interests.

637 Energy poverty's interconnectedness with other issues is seen both in the influence of external
638 political issues on the prominence of energy poverty but also in the preferences of politicians for
639 different policy solutions. In England and Ireland, energy efficiency is increasingly identified in policy
640 documentation as the preferred policy solution for addressing energy poverty in the long term.
641 Arguably, this preference is partly due to its overlap with other prominent agendas, such as reducing
642 carbon emissions from the residential sector. It is also easier to argue for energy efficiency in a
643 context in which benefits are being cut under austerity, and there is no appetite to conceive of the
644 energy market as failing the energy poor (Middlemiss, 2017). The broader definition of energy

poverty in France would make it difficult to espouse such a targeted policy solution: if the problem is defined as encompassing affordability and efficiency, it is less appropriate to highlight one form of policy solution as preferable. As highlighted, the overall level of energy poverty is measured differently in each country. It is therefore difficult to compare the success of policy solutions. In England, the relative income measure, and in Ireland a subjective measure record increasing level of households in energy poverty between 2004-2010. These increase coincides with rising energy prices and a period of recession. The increase in energy poverty also coincides with an increase in both affordability and efficiency policy support, but there is no indication of the impact of these increases in support. In France, a similar subjective measure records a relatively consistent level of energy poverty between 2004-2016, again demonstrating the difficulty of measuring the effectiveness of policy solutions.

Despite the stated preference for efficiency policy in some countries, affordability policies receive substantially higher levels of public funding in all three countries. This can partly be explained by affordability's place within wider social welfare concerns, which is a more established area of policy that is contentious (albeit not impossible) to reform. The case studies showed that in Ireland the link between energy and social welfare is made explicitly; in England affordability policy is more widely available and resistant to rollback than efficiency policy; and in France, the public funding of some of the affordability policy marks it out as stemming from social welfare motivations. Exactly how these dynamics function is a recurring concern of policy studies and insitutionalist thought, addressing questions of how certain approaches to policy problems and solutions become locked-in and how this can be destabilized by politics over time e.g. in the various contestations around welfare reform in the UK.

The approach to how the problem of energy poverty is officially defined and interpreted is also highly divergent. In Ireland, there has been a relative openness to problem definition, with government documentation routinely highlighting that there are multiple established means of defining the issue and being reluctant to wholly adopt one definition. A similarly broad approach is taken in France with regards to the understanding of the causes of the issue and also to using a range of indicators. The English approach to definition is much narrower. Although the definition of what it means for a household to be energy poor changed significantly between 2010 and 2015 (Middlemiss, 2017), the approach in England has remained to restrict conceptualisation to a single interpretation and indicator.

Whether energy poverty is thought of as an issue of domestic thermal comfort or of access to a wider range of energy services also offers an interesting point of comparison. In France, the issue is conceived of broadly, with all domestic energy services considered relevant, including energy for mobility. In Ireland, the initial problematisation focused on a lack of warmth but moved on to other energy services and there has been some reference to transport fuels. In England, the initial and ongoing emphasis has been on thermal comfort with little or no specific reference to wider energy services (Simcock et al., 2016) focussing instead on World Health Organisation guidelines on room temperatures and linking strongly to the health impacts of under-heating.

All three countries demonstrated a similar approach to allocating policy support, in which affordability and efficiency support is administered to certain social groups e.g. low income, elderly etc. that do not necessarily overlap with the definition of the issue that is currently in place. It is interesting to note that there is an apparently accepted misalignment in each case study between problem definition and solution application in this regard. It could be inferred that energy poverty definition is primarily a means of assessing the scale of the issue rather than as a means of directing and determining policy solutions.

691 The approaches to problematisation, solutions and the related political influences, are also an
692 indication of each countries' style of governance in relation to energy poverty. The French approach,
693 for instance, with its open definition of the problem and Dirigiste approach to the energy market
694 suggests a form of governance that attempts to address this through state intervention (in spite of
695 the liberalisation requirements of the EU), and as a complex and multi-faceted problem. In contrast,
696 the English approach entails an attempt to pin down what the problem is in rather simple terms,
697 while also taking a pioneering approach to energy market liberalisation which fits with the
698 characterisation by Hall and Soskice of a liberalised market economy (LME) (2001). Ireland is also
699 seen as having strong LME characteristics with social objectives at times viewed as "vague and
700 aspirational", a governance style which is certainly apparent in energy poverty policy (O'Callaghan,
701 Lenihan, & Mcdonough, 2016). The relative size of Ireland (to England and France) and the resultant
702 difference in bureaucratic resource is potentially of relevance here.

703 Finally, while previous research has highlighted that MS theory can be interpreted and applied in
704 different ways (Cooper-Searle et al., 2018), our analysis utilises the theoretical separation of politics,
705 problem and policy solution but finds these theoretically separate streams to be rather
706 interconnected. Whilst previous research has identified the potential for multiple problem streams
707 to connect with a single policy solution stream (Kerr et al, 2017), the issue of energy poverty reveals
708 multiple problems interacting with multiple policy solutions, and multiple external political forces, in
709 a policy swamp where the individual streams are not always easy to delineate. In energy poverty,
710 the MS concept of a policy window being opened by the confluence of a problem, solution and
711 political stream may be more appropriately thought of as a policy lake; once policy emerges it can
712 become entrenched and linger for an indefinite amount of time. The lake of affordability policy, for
713 example, is served by two streams of problem - energy poverty and social welfare - while the
714 efficiency policy stream is more recently formed by the streams of energy poverty and climate
715 change. The streams flowing into the affordability lake are wider and thus produce a policy lake that
716 is more established and more difficult to drain, despite the preferences of policy experts.

717 6. Conclusion

718 Access to energy services can be hindered by low incomes, high energy prices and inefficiency (e.g.
719 in domestic heating or other technologies). This paper complements the literature on the
720 established causes of energy poverty by considering the approaches to definition and solution in
721 three different policy contexts. Policymakers in countries around the world face significant
722 challenges when addressing these causes within their own contexts. In Western Europe, where the
723 definition of energy poverty has its origins, the impact of numerous social and political factors can
724 be seen in the way governments have responded to the problem. As we have shown in the three
725 case studies of England, Ireland and France, these factors include: broad economic trends such as
726 recession, austerity and living costs, approaches to governance i.e. the use of market-based
727 mechanisms and state intervention, the flexibility of definitions and measurement, and the
728 importance of overlaps with concurrent political agendas such as welfare reform and climate
729 change.

730 In applying multiple streams theory to our case studies, we encountered some incongruences and
731 also raised some observations that warrant further exploration. With regards to multiple streams
732 theory, our main contribution is to note that in this policy context 'untangling' one stream from
733 another is not straightforward. Specifically, politics, problems and policies do not emerge, or even
734 fit, into a linear sequence and policy solutions are often inextricably linked to other problems and
735 political issues. This makes interpretation of a particular policy area, such as energy poverty,

impractical without due attention to its proximate issues. Empirically, we observed that policy solutions in each country took a similar form and received similar proportional levels of funding (favouring affordability over efficiency). However, the political rhetoric favoured efficiency over affordability solutions and problematised energy poverty very differently, particularly in terms of definition flexibility. This raises interesting questions about the function and value of definitions, suggesting that the processes of framing and problematising energy poverty is not always pragmatic.

743 **References**

744 Amorce, CLER, Association nationale Compagnons Bâtisseurs, et al. (2005) *Manifeste: Habitat,*
745 *Précarité sociale et Énergie*.

746 Bafoil F, Fodor F and Le Roux D. (2014) Introduction/Institutions nationales et marchés de
747 l'électricité en Europe. *Accès à l'énergie en Europe.* Presses de Sciences Po (PFNSP), 13-30.

748 Barrett, J., Owen, A. & Taylor, P. 2018. Funding a low carbon energy system: a fairer approach?
749 Policy Briefing, 02 March 2018. UK Energy Research Centre.
750 http://www.ukerc.ac.uk/publications/funding-a-low-carbon-energy-system.html

751 Baumgartner, F. R., & Jones, B. D. (1991). Agenda Dynamics and Policy Subsystems. *The Journal of*
752 *Politics*, *53*(4), 1044–1074.

753 BEIS (Department for Business, Energy and Industrial Strategy). (2017). Draft Domestic Gas and
754 Electricity (Tarriff Cap) Bill. October 2017. Available:
755 https://www.gov.uk/government/publications/draft-domestic-gas-and-electricity-tariff-cap-bill

756 Boardman, B. (1991). *Fuel poverty: from cold homes to affordable warmth*. London, UK: Belhaven
757 Press.

758 BPIE. (2014). *Alleviating Fuel Poverty inthe EU: Investing in home renovation, a sustainable and*
759 *inclusive solution.*

760 Cairney, P. (2012a). Chapter 5: Rationality and Incrementalism. In *Understanding Public Policy:*
761 *Theories and Issues* (pp. 94–110). Palgrave Macmillan, London.

762 Cairney, P. (2012b). Chapter 9: Punctuated Equilibrium. In *Understanding Public Policy: Theories and*
763 *Issues* (pp. 175–199). Palgrave Macmillan, London.

764 Cairney, P. (2012c). *Understanding the Public Policy Process. Theories and Issues*. London: Palgrave
765 Macmillan.

766 Callan, T., Lyons, S., Scott, S., Tol, R. S. J., & Verde, S. (2009). The distributional implications of a
767 carbon tax in Ireland. *Energy Policy*, *37*, 407–412. https://doi.org/10.1016/j.enpol.2008.08.034

768 Carter, N., & Jacobs, M. (2014). Explaining radical policy change: The case of climate change and
769 energy policy under the British labour government 2006-10. *Public Administration*, *92*(1), 125–
770 141. https://doi.org/10.1111/padm.12046

771 CER. (2017). 2016 Electricity and Gas Retail Markets Annual Report. Commission for Energy
772 Regulation, Dublin, Ireland.

773 Chang, H.-J. (2014). *Economics: The user's guide*. Penguin Group.

774 Cobb, R., Ross, J.-K., & Ross, M. H. (1976). Agenda Building as a Comparative Political Process. *The*
775 *American Political Science Review*, *70*(1), 126–138.

776 Convery, F. (2013). Budget 2013: Three Cheers for the Carbon Tax.

777 Cooper-Searle, S., Livesey, F., Allwood, J.M. Why are Material Efficiency Solutions a Limited Part of
778 the Climate Policy Agenda? An application of the Multiple Streams Framework to UK policy on
779 CO2 emissions from cars. Environmental Policy and Governance, 28, 51-64. DOI:
780 10.1002/eet.1782

781 Devalière I and Teissier O. (2014) Les indicateurs de la précarité énergétique et l'impact de deux
782 dispositifs nationaux sur le phénomène. *Informations sociales*: 115-124.

783 DCENR. (2009). *Maximising Ireland ' s Energy Efficiency: The National Energy Efficiency Action Plan*
784 *2009 - 2020*.

785 DCENR. (2011). *Warmer Homes: A Strategy for Affordable Energy in Ireland*. Dublin, Department of
786 Communications, Energy and Natural Resources.

787 DCENR. (2015). *Towards a New Affordable Energy Strategy for Ireland. Consultation Paper*.
788 Department for Communications, Energy and Natural Resources, Dublin, Ireland.

789 DCENR. (2016). *A Strategy to Combat Energy Poverty: 2016 - 2019*.

790 DCMNR. (2007). *Government White Paper: Delivering A Sustainable Energy Future For Ireland Table*
791 *of Contents*.

792 DECC. (2010). Spending Review – HMT Press Release. 20 October 2010. Available at:
793 https://www.gov.uk/government/news/spending-review-hmt-press-release

794 DECC. (2014). Process Evaluation of the Warm Front Scheme. Prepared by Ipsos MORI and University
795 College London (UCL) for the Department of Energy and Climate Change. 28 March 2014.
796 Available at:
797 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/322901/War
798 m_Front_Evaluation_Report.pdf

799 DECC. (2015). Cutting the Cost of Keeping Warm – a Fuel Poverty Strategy for England. March 2015.
800 Available at:
801 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/408644/cutti
802 ng_the_cost_of_keeping_warm.pdf

803 DECC. (2016). ECO: Help to Heat. Consultation document, 29 June 2016. Available at:
804 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/531964/ECO
805 _Help_to_Heat_Consultation_Document_for_publication.pdf

806 DoF. Budget Ireland (2010).

807 Droit à l'Energie SOS FUTUR (2018) *personal communications*, 6 December, email.

808 DSP. (2017). Fuel Allowance Scheme: Operational Guidelines.

809 DWP. (2015). Winter Fuel Payment Official Statistics: Background information note, September
810 2015. Available at:
811 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/462202/back
812 ground-note-winter-fuel-payment-statistics-sept-2015.pdf

813 Economidou, M., Laustsen, J., Ruyssevelt, P., & Staniaszek, D. (2011). *Europe's Buildings Under the*
814 *Microscope: a country by country review of the energy performance of buildings*.

815 Elliott, B. (2017). *Natural Catastrophe: Climate Change and Neoliberal Governance*. Edinburgh
816 University Press.

817 European Fuel Poverty and Energy Efficiency Project (EPEE). (2009) New mechanisms to tackle fuel
818 poverty: selected proposals from Belgium, Spain, France, Italy and United Kingdom.

819 Gillard, R. (2016) Unravelling the United Kingdom's climate policy consensus: the power of ideas,
820 discourse and institutions. Global Environmental Change, Vol. 40:26-36.

821 Government, T. I. (2007). *National Action Plan for Social Inclusion*.

822 Fischer, F. 2003. Reframing public policy: discursive politics and deliberative practices,

823 Oxford University Press

824 Healy, J. (2003). *Fuel Poverty and Policy in Ireland and the European Union*.

825 Hearne, R. (2015). The Irish water war. *Interface*, *7*(May), 309–321.

826 Hills, J. (2011). *Fuel Poverty: The Problem and its measurement: Interim Report of the Fuel Poverty*
827 *Review*. Centre for Analysis of Social Exclusion (CASE). Retrieved from
828 http://sticerd.lse.ac.uk/dps/case/cr/CASEreport69.pdf

829 Hills, J. 2012. Getting the Measure of Fuel Poverty: Final report of the Fuel Poverty Review, March
830 2012. Available at:
831 http://webarchive.nationalarchives.gov.uk/20121217150421/http://decc.gov.uk/assets/decc/1
832 1/funding-support/fuel-poverty/4662-getting-measure-fuel-pov-final-hills-rpt.pdf

833 HM Treasury. (2003). *The Green Book: Appraisal and Evaluation in Central Government*. *Evaluation*.
834 https://doi.org/http://greenbook.treasury.gov.uk/index.htm

835 Hough, D. (2016). The Warm Home Discount Scheme. Briefing Paper. 6 May 2016. Available at:
836 http://researchbriefings.files.parliament.uk/documents/SN05956/SN05956.pdf

837 Imbert I, Nogues P and Sevenet M. (2016) Same but different: On the applicability of fuel poverty
838 indicators across countries—Insights from France. *Energy Research & Social Science* 15: 75-85.

839 Inter-Ministerial Group on Fuel Poverty. 2001. The UK Fuel Poverty Strategy. Available at:
840 http://webarchive.nationalarchives.gov.uk/+/http:/www.berr.gov.uk/files/file16495.pdf

841 Jouffe Y and Massot M-H. (2013) *Vulnérabilités sociales dans la transition énergétique au croisement*
842 *de l'habitat et de la mobilité quotidienne*. *1er Congrès interdisciplinaire du Développement*
843 *Durable, Quelle transition pour nos sociétés*. 23-57.Kennedy, S. (2010). Cold Weather
844 Payments. House of Commons Standard Note, SN/SP/696. Available at:
845 http://researchbriefings.files.parliament.uk/documents/SN00696/SN00696.pdf

846 Kerr, N., Gouldson, A., & Barrett, J. (2017). The rationale for energy efficiency policy: Assessing the
847 recognition of the multiple benefits of energy efficiency retrofit policy. *Energy Policy*,
848 *106*(March), 212–221. https://doi.org/10.1016/j.enpol.2017.03.053

849 Kingdon, J. (1995). *Agendas, Alternatives and Public Policies* (Second). New York: Harper Collins.

850 Le Roux, D. (2014a). Le service public français en débat. Accès à l'énergie en Europe. Presses de
851 Sciences Po (PFNSP).

852 Le Roux, D. (2014b). Les transformations du modèle industriel public français. *Accès à l'énergie en*
853 *Europe*. Presses de Sciences Po (PFNSP).

854 Lewis, P. (1982). *Fuel poverty can be stopped*. Bradford, UK. National Right to Fuel Campaign.

855 Marmot Review Team 2011. The Health Impacts of Cold Homes and Fuel Poverty. Marmot Review
856 Team and Friends of the Earth. Available:
857 https://www.foe.co.uk/sites/default/files/downloads/cold_homes_health.pdf

858 Mccarthy, N. (2005). *Market Size , Market Structure & Market Power in the Irish Electricity Industry*.
859 The Economic and Social Research Institute, Dublin, Ireland.

860 MEYER, S., HOLZEMER, L., DELBEKE, B., MIDDLEMISS, L. & MARÉCHAL, K. 2018. Capturing the
861 multifaceted nature of energy poverty: Lessons from Belgium. Energy research & social science,

862 40, 273-283.

863 Middlemiss, L. 2017. A critical analysis of the new politics of fuel poverty in England. Critical Social
864 Policy, 37, 425-443.

865 MIDDLEMISS, L., GILLARD, R., PELLICER, V. & STRAVER, K. 2018. Plugging the gap between energy
866 policy and the lived experience of energy poverty: five principles for a multi-disciplinary
867 approach. In: FOULDS, C. & ROBISON, R. (eds.) Advancing Energy policy: Lessons on the
868 Integration of Social Science and Humanities. Bern: Springer.

869 NAO. (2009). The Warm Front Scheme. Report by the Comptroller and Auditor General. 4 February
870 2009. Available at: https://www.nao.org.uk/wp-content/uploads/2009/02/0809126.pdf

871 NICE (National Institute for Health and Care Excellence). (2015). Excess winter deaths and illnesses
872 and the health risks associated with cold homes. NICE guideline [NG6}, March 2015.
873 https://www.nice.org.uk/guidance/ng6/chapter/1-recommendations

874 Nilsson, M. (2005). Learning, frames and environmental policy integration: The case of Swedish
875 energy policy. *Environment and Planning C: Government and Policy*, *23*(2), 207–226.
876 https://doi.org/10.1068/c0405j

877 Observatoire National de la Précarité Energétique (ONPE). (2014) Premier raport de l'ONPE.
878 Définitions, indicateurs, premiers résultats et recommandations. In: ONPE (ed). Paris.

879 RTE. (2012). €3bn sale to include parts of ESB, Bord Gáis. Retrieved July 5, 2018, from
880 https://www.rte.ie/news/2012/0222/313725-state_assets/

881 Rutter, J. & Knighton, W. 2012. Legislated Policy Targets: Commitment device, political gesture or
882 constitutional outrage? Institute for Government. Available at:
883 https://www.instituteforgovernment.org.uk/sites/default/files/publications/Legislated%20poli
884 cy%20targets%20final.pdf

885 Scheer, J. (2013). Ensuring efficient government expenditure on alleviating fuel poverty in Ireland. In
886 *ECEEE 2013 Summer Study* (pp. 1353–1363).

887 Scott, S., Lyons, S., Keane, C., Mccarthy, D., & Tol, R. S. J. (2008). Working Paper No . 262 FUEL
888 POVERTY IN IRELAND : EXTENT , AFFECTED GROUPS AND POLICY ISSUES, (262).

889 Scrase, J. I., & Ockwell, D. G. (2010). The role of discourse and linguistic framing effects in sustaining
890 high carbon energy policy-An accessible introduction. *Energy Policy*, *38*(5), 2225–2233.
891 https://doi.org/10.1016/j.enpol.2009.12.010

892 SEAI. (2004). *Annual Report 2004*.

893 SEAI. (2010). *Annual Report 2010*. Retrieved from
894 http://www.seai.ie/Publications/SEAI_Publications/SEAI_Annual_report_2010.pdf

895 SEI. (2003). *A Review of Fuel Poverty and Low Income Housing*.

896 Shim, J., Park, C., & Wilding, M. (2015). *Identifying policy frames through semantic network analysis:*
897 *an examination of nuclear energy policy across six countries*. *Policy Sciences* (Vol. 48).
898 https://doi.org/10.1007/s11077-015-9211-3

899 Simcock, N., Walker, G. & Day, R. 2016. Fuel poverty in the UK: beyond heating? *People, Place and*
900 *Policy.* DOI: 10/1, pp. 25-41. DOI: 10.3351/ppp.0010.0001.0003

901 Smyth, J. (2010). O Cuiv rules out fuel vouchers for low paid.

902 Snell, C., Lambie-Mumford, H. and Thomson, H., 2018. Is there evidence of households making a
903 heat or eat trade off in the UK?. Journal of Poverty and Social Justice.

904 Sovacool, B. (2015). Fuel poverty, affordability, and energy justice in England: Policy insights from the
905 Warm Front Program. Energy, 93: 361-371.

906 Stokes, L. C., & Warshaw, C. (2017). Renewable energy policy design and framing influence public
907 support in the United States. *Nature Energy*, *2*(June), 17107.
908 https://doi.org/10.1038/nenergy.2017.107

909 Stone, D. (1989). Causal Stories and the Formation of Policy Agendas. *Political Science Quarterly*,
910 *104*(2), 281–300.

911 Thurley, D. & Kennedy, S. (2017) Winter Fuel Payments Update. Briefing Paper, House of Commons
912 Library. Available:
913 http://researchbriefings.files.parliament.uk/documents/SN06019/SN06019.pdf

914 Tosun, J., Biesenbender, S., & Schulze, K. (2015). *Energy Policy Making in the EU: Building the*
915 *Agenda*. Springer.

916 Tyszler J, Bordier C and Leseur A. (2013) Lutte contre la précarité énergétique: analyse des politiques
917 en France et au Royaume-Uni. In: Economics IfC (ed) *Etude Climat*.

918 Watson, D. & Maitre, B. (2015). Is Fuel Poverty in Ireland a Distinct Type of Deprivation. The
919 Economic and Social Review. Vol 46, No. 2, pp. 267-291

920 Zahariadis, N. (1999). Ambiguity, Time and Multiple Streams. In P. A. Sabatier (Ed.), *Theories of the*
921 *Policy Process* (pp. 73–93). Westview Press, Cambridge MA.

922