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#### Original research article

# Food related routines and energy policy: A focus group study examining potential for change in the United Kingdom



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ABSTRACT

This paper explores the interlinkages between energy demand and food-related routines, to understand how routines that benefit energy demand management throughout the food system might be encouraged. Building on existing social science research, focus group data are used to examine the routines of people in three work-life situations; working parents, city dwellers, and empty nesters. A critical space in which to examine aspects of everyday life that entrench everyday routines is created by examining peoples' feelings about their present routines and their aspirations for change. The resulting discussions illustrate the role of social and temporal commitments in shaping food routines, and how the different modes of provision, meals and methods of cooking used to navigate these commitments influence what is purchased and eaten. These aspects of everyday life therefore contribute to reinforcing and replicating patterns of energy use throughout the food system. The following discussions develop these initial findings to explore how interventions might support individual experimentation with alternative shopping, cooking and eating practices, and in so doing influence the ongoing evolution of food-related routines to the benefit of energy demand management.

#### 1. Introduction

In the United Kingdom (UK), 18% of total primary energy use [1], and more than 20% of greenhouse gas emissions [2] are attributable to food production and consumption. Consequently, food is an increasing area of interest for researchers concerned with energy demand management and climate change mitigation. There is clear potential for changes in food production and consumption to contribute to achieving energy and emissions targets [3]. Yet researchers in various disciplines have noted that food-related routines, such as cooking and eating, are highly resistant to policy intervention. Indeed, Powells et al. [4] observe that cooking and eating are amongst the least flexible of everyday routines, not least because people need to eat at regular intervals, but also as cooking and eating are inextricably entangled in practices of working, childcare and leisure. As a result the ability to strategically intervene in the character of food-related routines or their temporal patterning so as to lessen their energy impacts is diminished.

Drawing on data from focus groups conducted in the UK, this paper examines the configuration of food-related routines in three social groups; City Dwellers, Working Parents and Empty Nesters (see Section 4 for details). Existing research illustrates how work circumstances and household composition influence everyday activity, thus exploring food-related routines within these groups enables examination of how certain routines arise and are sustained, and how change might be facilitated. The characteristics of food-related routines vary within and between countries (e.g. see [5]), as do the relative importance of environmental impacts such as energy or water demand. Yet common influences on routine (e.g. working hours and access to services of provision) mean that furthering these discussions might inform the investigation of routines in other international contexts. Furthermore, the extensive geographic reach of food supply chains means that changes in one country have global consequences for energy use, therefore identifying means of increasing the efficacy of intervention in one country is of broader global value.

The paper proceeds in the following sections: Section 2 introduces the various relationships between patterns of food consumption and energy use throughout the supply chain. This discussion illustrates the interdependence of production and consumption systems and identifies opportunities for energy demand management that might be supported through changes to daily routines. Section 3 briefly summarises the existing literature on routines, establishing the rationale for the present research, the methodology for which is presented in Section 4. The findings from this study are presented and discussed in Section 5; Section 5.1 considers participants' feelings regarding their present routines and the extent and nature of changes they desire to examine the aspects of everyday life involved in structuring and reproducing

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energy intensive routines. Section 5.2 builds on these discussions, exploring participants' ideas of how interventions might enable experimentation with less energy intensive practices, and in so doing influence the ongoing evolution of food-related routines. These lines of enquiry are designed to create a critical yet problem-oriented space in which to generate insights to inform policy and management practice.

#### 2. Energy demand in food supply chains

There are numerous relationships between energy and food where changes in everyday patterns of consumption might prove beneficial. Perhaps most immediately apparent is the domestic energy demand associated with cooking and refrigeration. Combined, refrigeration and cooking result in approximately 30% of domestic electricity use<sup>1</sup> and contribute to peak load [6]. Subsequently, rescheduling food preparation activities would temporally shift energy demand and thereby reduce peak load, while changes to the practices of food storage, cooking and eating may offer absolute energy savings [7]. Another commonly recognised relationship is food waste. With as much as 50% of all food produced being wasted [8], reducing losses throughout the supply chain is one way of reducing the resource intensity of food systems [9]. However, though both food waste and domestic energy use are important, they remain only part of the energy demand management picture and patterns of shopping, cooking and eating have various implications for how energy is used throughout food supply chains [10].

Firstly, certain dietary trends correspond with more energy intensive production practices. This is particularly the case for diets high in animal proteins due to the energy embedded in the production of animal feed and the energy used on farms. This is particularly the case for beef and lamb [11]. Subsequently reducing the proportion of meat in daily meals and/or shifting consumption from beef and lamb to pork and poultry has the potential to make a substantial contribution towards energy demand management [12].

Secondly, as a net importer of food [13] transport energy is a substantial issue in the UK. Fuel associated with air freight - typically associated with the international trade of fresh fruits and vegetables [14] - is particularly notable, however the significant road mileage incurred by moving produce around Europe is also relevant in a UK context. Substantial energy savings could be achieved by reducing food miles, however replacing overseas production with local growing in artificial conditions can be as energy intensive as importing goods.<sup>2</sup> Thus from an energy management perspective, shifting focus towards seasonal produce with a reduced transport radius and omitting air freight, is desirable [3].

Thirdly, there are opportunities for energy demand management in retail and catering. Striking a balance between business' operational energy and the customer transport miles associated with procurement is one consideration. For example, larger stores are typically more energy efficient [15] however are also frequently situated outside of densely populated areas requiring customers to travel further to shop there. A second consideration is the energy implications of different modes of procurement and cooking, with studies illustrating that both eating out [16], and ready-meals [17] are more intensive than those prepared at home. The precise impacts of different meals and modes of provision are difficult to quantify, nevertheless, such findings highlight a need to understand the factors that influence what people eat and where their meals are procured.

These examples illustrate that energy use throughout food supply chains is deeply entangled in food-related routines. The growing academic interest in the study of so-called ordinary or inconspicuous consumption [18,19], is pertinent to these discussions. This body of research has usefully elucidated the contingencies of resource intensive routines, particularly with regards to domestic energy use, mobility and leisure. These insights, where they have been applied to food have proven valuable - for example Evans' [20,21] research on food waste, and Delormier et al. [22] who illustrate the significance of sociocultural context in shaping how people acquire food, and what is eaten. To date however, it remains relatively uncommon for energy research to focus explicitly on food-related routines, or for studies of food-related routines to interrogate the multifaceted relationships between these routines and energy use in supply chains. Where connections are made these tend to be contained within studies of domestic energy demand, a tendency that directs attention to the home and obscures avenues for intervention that might have broader potential to reduce energy throughout the food system. Consequently, in seeking a fuller understanding of how food-related routines arise and persist, and how change could be facilitated, this paper identifies opportunities to support energy demand management throughout the food system.

#### 3. Routines and energy demand

Routines have been variously conceptualised; as 'auto-pilots' that save endless trivial decision-making [23,24] or paths that sequence the myriad of actions incorporated in everyday life [25], but also as addictions [26] or prisons [25], patterns of everyday action that become so lastingly and effectively configured that alternative modes of action become unlikely. Thus, in different circumstances, routines can be understood to structure and enable flow, or to trap individuals in monotonous continuity. Indeed several authors argue that these qualities are two parts of the same experience, as Wilk summarises, "the rhythms of life that both liberate us from constant worry, and keep us in constant bondage" (). For the present research Wilk's paradox is suggested to provide an opportunity in which individuals may reflect on their participation in different routines, as their aspirations may not evenly map onto their realities. This space for reflections enables the explorations of the various dynamics of change and continuity that shape food-related routines, with the possibility of identifying opportunities to enhance their flexibility to the potential benefit of energy policy.

Routines are commonly defined as repetitive sequences of actions [18], however the interpretation of such a statement varies between disciplines. From a social practice perspective Southerton proposes that "routine forms of action are the observable performances of stable practices" with practices in turn described as "configurations of the recognizable, intelligible and describable elements that comprise their conditions of existence" (). Various archetypes to classify these elements have been proposed, highlighting the combination of material objects, competencies (or know-how), and socially shared meanings which co-exist (and co-evolve) within socio-technical systems, spatial structure and temporal rhythms. In contrast, from a social psychology perspective, routines<sup>3</sup> are a form of automaticity, impulsive modes of action "that develop as people repeat actions in stable circumstances" (). The expectation that repetition of similar behaviour in a similar context will yield similar outcomes reinforces habitual behaviour over time, and reduces the extent to which individuals seek and respond to new information.

In some regards there are similarities between these accounts, not least

<sup>&</sup>lt;sup>1</sup> Note the omission of gas in this study.

 $<sup>^2</sup>$  Milà et al. [46] provide an excellent illustration of the tension between local and seasonal growing in their analysis of lettuce for UK consumption. Their study demonstrates that lettuce incurs less than 0.5 kg CO<sub>2</sub>e kg<sup>-1</sup> when grown outdoors in the UK, while Spanish lettuce consumed in the UK incurs approximately 0.8–1 kg CO<sub>2</sub>e kg<sup>-1</sup>, as a result of transport emissions. In contrast indoor-grown British lettuce results in approximately 5 kg CO<sub>2</sub>e kg<sup>-1</sup>, due to heating, and Ugandan lettuce, air freighted due to its short shelf-life, over 10 kg CO<sub>2</sub>e kg<sup>-1</sup>. Though Ugandan lettuce is the most energy intensive, growing lettuce out of season in the UK also has significant environmental impacts.

<sup>&</sup>lt;sup>3</sup> It is worthy of note that the terms habit and routine are conflated in this discussion for a necessary brevity, and their distinction perhaps reveals something of the emphasis placed on socio-temporal patterns (for further detail compare [28,30].

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