RESEARCH ARTICLE

Governing energy in organisations: Energy management professionals, marginalised practices, and the limits to change

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Abstract

Organisations and institutions of many kinds play important roles in maintaining and transforming energy systems, not least through their direct contributions to energy demand. Major service-providing institutions such as universities and hospitals have especially large and complex demands. Facing pressures to reduce environmental impacts and costs, many of these organisations are trying to reduce their energy consumption—with varying degrees of success. The responsibility for pursuing this goal in practice often lies with practitioners here referred to as Energy Management Professionals (EMPs). However, there has been little systematic investigation of EMPs' practices and their energy implications. Using qualitative evidence from English universities and hospitals, we argue that three types of work are marginalised in EMPs' practices, namely: (a) change-focused work, and within that; (b) work engaging with people and what they do, and within that; (c) work engaging with institutional policy-making. We argue that these marginalisations limit the scale and scope of demand reduction efforts, and also show how they arise from interacting dynamics of national policies and priorities, institutional structures and professional practices, and the influence of neoliberal governance, among other things. Finally, we discuss how rethinking institutional energy governance could help reduce energy demand and reflect on wider lessons for research and policy on organisational sustainability.

KEYWORDS

demand, energy management, governance, organisations, professional practice, sustainability

1 | INTRODUCTION

Organisations and institutions of many kinds play important roles in maintaining and transforming energy systems, making the study of these "a key component of analysis and policy formulation for the low-carbon energy transition" (Andrews-Speed, 2016: p 223). While the terms "institution" and "organisation" are very broad, our focus here is on major service-providing institutions such as universities and

hospitals, and on the energy demands associated with their activities. These demands are large: many universities consume as much energy as a small town (Sorrell, Schleich, O'Malley, & Scott, 2004) and hospitals often use even more (BEIS, 2016). These energy demands are also typically highly complex, tied to a range of core organisational activities, making efforts to transform organisational patterns of energy use no less complex in turn. Moreover, the challenges associated with organisational change are well-documented (e.g., Hayes, 2018; Schmitt, Raisch, & Volberda, 2018), including in relation to sustainability (Burnes, 2017; Wright & Nyberg, 2017). As long-running debates

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on environmental policy integration (e.g., Jordan & Lenschow, 2010) and climate policy integration (e.g., Kettner & Kletzan-Slamanig, 2020) indicate, it can be extremely difficult for institutions to meaningfully embed sustainability agendas into their operations.

In practice, the responsibility for pursuing energy goals in service-providing organisations often lies with practitioners referred to here as "Energy Management Professionals" (EMPs). The importance of EMPs in managing and reducing energy consumption has been widely recognised (e.g., Gordić et al., 2010; Kurland & Zell, 2010; Martin, Muûls, de Preux, & Wagner, 2012; Min, Morgenstern, & Marjanovic-Halburd, 2016; Sarpin, Yang, & Xia, 2016). However, while there has been some research on what EMPs do, there has been very little investigation of what they **do not** currently do, which is important if we are to think about how energy management could be done differently. We also know little about **why** EMPs do not do certain things, including the influence of their roles, responsibilities, powers and positioning within institutions.

This article addresses these two issues through a qualitative analysis of the Higher Education (HE) and health sectors in England, asking, firstly, what types of work are marginalised within EMPs' practices and how this matters for demand reduction; and secondly, how and why these forms of marginalisation are reproduced. Section 2 provides a brief review of the literatures on organisational change and energy management, and outlines our conceptual framework, which is informed by a practice-theoretical understanding of organisations, professional work and governance processes. Section 3 sets out our methodology, based on interview and documentary evidence from universities and hospitals in England. Section 4 presents findings, identifying three nested forms of marginalisation within EMPs' work— of change-focused work, of cross-organisational engagement, and of institutional policy and practice—and reflecting on how this matters for the scale and scope of energy system transformation. Section 5 explains some reasons for these patterns of marginalisation, including interwoven trajectories in institutional arrangements, professions and wider socio-technical landscapes. Section 6 concludes, considering how these findings might or might not apply to other sites and settings, and reflecting on how change in the practices and arrangements of energy management could help reduce organisational energy demand and its environmental impacts.

2 | PERSPECTIVES ON ORGANISATIONAL CHANGE AND ENERGY MANAGEMENT

2.1 | Organisational change

There are extensive literatures on organisational theory, management and change, which provide insights for the study of energy management. Notably, there has been a shift in organisational studies away from an understanding of organisations as entities and towards an understanding of organising as a social process (Nicolini, 2012; Clegg, Hardy, & Nord, 1996). At the same time, there has been a move away from views of organisational change as a rational process involving strategic choices (Anyieni, Ondari, Mayianda, & Damaris, 2016) and

towards a more evolutionary approach in which "organizations are viewed not as fixed entities, but as unfolding enactments" in a constant process of change, resistance and adaptation (Thomas, Sargent, & Hardy, 2011, p 22). However, within mainstream organisational studies there remains an emphasis on top-down models of change, within which various "levers" may be deployed (Anyieni et al., 2016) such as leadership techniques, communication initiatives, training, planning, and incentive systems (Aladwani, 2001). There remains a dominant language of "drivers and barriers" that risks a reductionist view of change (Hampton, 2019), alongside a persistent view of resistance (e.g., from employees or customers) as something to be overcome through information and awareness campaigns, echoing the "ABC" (attitude-behaviour-choice) models that have been critiqued in other fields concerned with action and social change (Shove, 2010).

Challenging this, in the last two decades social practice theories have been applied to the study of organisations and organisational change (Corradi, Gherardi, & Verzelloni, 2010), including through influential work by Nicolini (2012), who argues that "the theoretical affordances of practice theories make this approach particularly attractive for modern organizational studies" (p.11). Within a practice theoretical framework, an organisation is conceptualised as emerging from, and reproduced by, mundane doings and sayings (Lutzenhiser, 2014; Nicolini, 2012; Schatzki, 2006). Drawing on ideas about the situated nature of learning (e.g., Lave & Wenger, 1991), work in this field has moved from a view of knowledge as a resource towards a view of knowing as an ongoing accomplishment within organisations (e.g., Orlikowski, 2002). At the same time, social practice research pays attention to the wide range of actors with roles in organisational change; to material arrangements; and to the power relations embedded in organisational practices (Nicolini, 2012).

Another notable contribution of practice theories is in challenging dualistic conceptions of internal and external processes, and "going beyond the distinctions between intra-organizational and extra-organizational levels" (Corradi et al., 2010, p.273). Within practice theories, specific situated performances and wider social relations are seen as mutually constitutive. In operationalising this, Nicolini (2012) has proposed an influential organisational research model involving "zooming in and zooming out", for instance, from the minutiae of everyday professional life to their long-term socio-technical contexts, and vice versa. In analysing projects to reduce transport carbon emissions, for example, Hampton (2018) simultaneously "zoomed in" to focus on specific actors, materials and competences, and "zoomed out" to analyse how these intersected with wider changes such as funding cuts, government restructuring and external audits.

In the field of energy management specifically, practice theory-inspired approaches to organisations and organisational change are relatively rare. Lutzenhiser (2014) argues that there has been virtually no work done in this field, despite organisational energy use (e.g., in office buildings and industrial processes) being an important target for energy efficiency policies and investments. Distilling many of the ideas outlined above regarding the nature of organisations and organisational change, Lutzenhiser proposes a new research agenda on energy in organisations, specifically:

"Using organizational theory and institutional discourse analysis to better **understand how energy uses and energy-savings choices are actually made in organizations** and multi-organization systems; how various rationalities, resource/power dimensions, trained incapacities, organizational cultures, and institutional investments play out in the shaping of energy flows through organizational domains." (emphasis added) (2014, p149).

As developed further in section 2.3, our theoretical framework is grounded in a practice-theoretical understanding of organisations and organisational change. Speaking directly to the agenda laid out by Lutzenhiser (2014), and also developed in the work of Hargreaves (2011), Powells et al. (2015) and Hampton (2019), our aim is to contribute to knowledge on the mundane practices through which organisational change in relation to energy and sustainability is enacted and, more importantly here, resisted or impeded. This informs our decision to centre the practices of professionals involved in the everyday doing of energy management, rather than to focus on "strategic" or top-down organisational management as the locus of change. However, informed by Nicolini's (2012) framework, we do not focus on a single "scale" of analysis but situate everyday performances within the context of socio-technical change, including shifting political agendas and the evolution of professions.

2.2 | Energy management as professional practice

The literature on managing energy within organisations includes work specifically on 'energy management,' as well as research on sustainability management or sustainability within Facilities Management (FM). The majority of the former type of research takes what may be thought of as a technical approach, with energy management portrayed as aiming for efficient or optimal provision of energy services (Kannan & Boie, 2003; Min et al., 2016). This research typically describes tasks of energy monitoring and auditing, fixing problems in energy services such as heating and lighting, and undertaking or overseeing energy efficiency projects, plus in some cases the promotion of user awareness (McConnell, 2001; Vikhorev, Greenough, & Brown, 2013). Meanwhile, the literature on sustainability management tends to emphasise the agency of EMPs and related professionals as actual or potential instigators of both technical and behavioural change within institutions, sometimes describing them as "champions" (Visser & Crane, 2010). In turn it often identifies individual skills and capacities for successful energy and sustainability management (Kurland & Zell, 2010; Sarpin et al., 2016).

Both strands of work include extensive discussion of what energy or sustainable facilities management should involve, including by providing technical tips and guidelines on good practice (e.g., Kurland & Zell, 2010; McConnell, 2001). Both strands typically also identify barriers to change—deficits of awareness, incentives, commitment, information, skills, finance or technology—and make limited proposals regarding how these might be overcome (Costa, Keane, Raftery, & O'Donnell, 2012; Elmualim, Valle, & Kwawu, 2012; Ivner et al., 2014). Studies sometimes call for the strengthening, widening or integration

of EMP's input within organisations (Ates & Durakbasa, 2012; Hodges, 2005; Min et al., 2016). However, this research tends not to examine EMPs' positioning within organisations, or in relation to social, political and economic pressures and changes.

A different perspective is offered by two papers on the everyday experiences of EMPs, which portray their professional lives as involving multiple relationships, continuous negotiations, and the balancing of competing demands (Aune, Berker, & Bye, 2009; Goulden & Spence, 2015). This research draws attention to how much time EMPs spend "fire-fighting" short-term problems, often at the expense of long-term sustainability projects, and provides some commentary on the influence of organisational contexts. Meanwhile, although the practice-based studies of organisational energy and sustainability management discussed above (Hampton, 2019; Hargreaves, 2011; Powells et al., 2015) do not focus on EMPs per se, they nonetheless offer rich description of the meaning-making, negotiations, temporal rhythms, embodied competences, and shifting uses of materials that constitute energy management.

Other relevant work draws inspiration from the long-established sociological literature on professions (e.g., Abbott, 1988) to explore the role of various professions within sustainability transitions (see for example, Maller & Strengers, 2015, and other contributions to that volume; Wade, Hitchings, & Shipworth, 2016; Strengers, 2012). However, Strengers (2012) concludes that further work is required to understand the opportunities for change within the professions of energy management, including "what it means to manage demand, and what **responsibilities are assigned to the professions** tasked with that role" (p 231, emphasis added).

2.3 | Advancing practice-theoretical understandings of energy management and organisational change

Our analysis in this article is informed by, and builds upon, this nascent body of sociological, and especially practice theoretical, research on the everyday doing of energy management in organisations. Starting from an understanding of professional work as a social practice (Kemmis, 2009), we analyse energy management as configured by dynamic interactions between everyday performances, institutional structures, and wider socio-technical contexts. In particular, we explore how organisational roles, responsibilities, powers and positioning are defined, both through formal and informal mechanisms, and their structuring effects on energy management practices. Our analysis also builds upon and extends recent research on "invisible energy policies" that examines how the boundaries between 'energy' and "non-energy" issues are drawn, and how this renders some issues visible while other issues are not, in turn defining the scope and limits of legitimate interventions (Cox, Royston, & Selby, 2016; Royston, 2019; Royston & Selby, 2019; Royston, Selby, & Shove, 2018). In doing this we draw on Nicolini's (2012) idea of zooming in and zooming out, as discussed above, to explore how everyday practices intersect with structures and policies at the institutional and national levels.

Specifically, we aim to advance knowledge on energy management and sustainability transitions in organisations in three ways. First, we attend to areas which are currently *marginal* to EMPs' work, but which are important if energy management is to be done differently. Secondly, we analyse *how and why* these patterns of marginalisation appear, moving beyond existing descriptions of EMP practice as dictated by "cost-saving", "efficiency" or "optimisation" objectives (McConnell, 2001; Min et al., 2016); as combining "financial, social and environmental motivations" (Kannan & Boie, 2003); or as being limited by various institutional "barriers" (Ivner et al., 2014; Nielsen, Sarasoja, & Galamba, 2016). Paying attention to EMPs' role definitions, responsibilities, powers and positioning within institutional structures helps us explain their practices, and also to reflect on how these organisational arrangements might change.

Related to this, thirdly, our analysis draws attention to the *historical changes* in EMP practices and their contexts. Within existing research there is acknowledgement of, for instance, how technological change has affected EMPs' work (Spence and Goulden, Goulden & Spence, 2015), the growing prominence of environmental concerns (Graubner, Pohl, & Pelzeter, 2016; Visser & Crane, 2010), the increasingly managerial character of energy management (Aune et al., 2009), and the rise of certain specific roles such as Facilities Managers (Sarpin et al., 2016). In what follows we build on these emphases to develop an in-depth discussion of the intersecting dynamics of institutional, professional and socio-economic change. Questions of change are clearly linked to the 'why' issue just discussed, since an analysis of processes of change can help explain contemporary practices—and inform normative reflection.

A final, and broader, contribution that we seek to make is to advance knowledge on energy demand and its governance. While supply-side issues are also important for emissions reduction, demand is often neglected in energy policy and energy management (Royston & Selby, 2019). Here, we aim to shed light on how the governing of energy demand is done in practice, and what this means for sustainability outcomes such as carbon emissions. In doing so, we also speak to wider debates about the challenges of governing sustainability in organisations.

3 | RESEARCH SETTINGS AND METHODS

3.1 | Energy demand and governance in English health and higher education

Hospitals and universities are the most "energy-intensive sites" in the English public sector, in terms of building-related energy consumption relative to floor area (BEIS, 2016). As well as building-related energy, hospitals and universities are significant contributors to travel demand—both through staff travel, goods movements and their wider role as "major trip attractors" (Preston and Raje, Preston & Rajé, 2007; Garikapati et al., 2016).[1] These and other demands for energy have several consequences. First, with both the health and Higher Education (HE) sectors experiencing severe financial pressures associated

with political agendas and demographic and economic changes—pressures which are predicted to become more intense over the next decade (HEFCE, 2018; National Audit Office, 2019)—institutions are increasingly concerned with costs and the risks posed by future energy prices (e.g., Carbon Trust, 2012; Mid Yorkshire Hospitals NHS Trust, 2014). There are also growing concerns about resilience, and the risks from being locked-in to energy infrastructures which are vulnerable to natural disasters (such as the flood damage to grids which closed Lancaster University in December 2015), and subject to the limits of local grid capacity (Thomas, 2018).

Last but not least, the energy demands of these institutions make a correspondingly significant contribution to carbon emissions. The health and care system in England is responsible for an estimated 4–5% of the country's carbon footprint (NHS, 2020); its latest reported annual emissions totaled 27.12 megatonnes of carbon dioxide equivalent (CO_2e) (Sustainable Development Unit, 2018). A patient spending one day in hospital generates an estimated 91 kg CO_2e (Sustainable Development Unit, 2012), similar to a 460-mile car journey. Meanwhile, the English HE sector reported emissions totaling 8.13 megatonnes CO_2e in their latest published data (2017/2018),[2] and the Department for Business, Energy and Industrial Strategy has stated that most of the potential for carbon reduction through energy-saving measures can be found in the health and education sectors (BEIS, 2016:2).

Both sectors have seen efforts to reduce carbon emissions and energy demand, especially since the passage of the UK Climate Change Act (CCA) in 2008. Between 2009 and 2018, the main framework for energy demand reduction within the English HE sector was provided by its regulator, the Higher Education Funding Council for England (HEFCE). In 2009 HEFCE adopted sector-wide target of an 80% cut in carbon emissions by 2050, alongside an interim target of 34% by 2020 (often expressed relative to 2005 levels, as a target of 43% by 2020). The next year, HEFCE's Carbon Reduction Strategy (HEFCE et al., 2010) required individual universities to set their own carbon reduction targets for 2020, and made receipt of HEFCE capital funding conditional on the existence of an institutional carbon management plan. However, individual institutions were able to set their own targets, which varied greatly, and collectively promised only a 38% in emissions relative to 2005. Based on the latest data (for 2017/18), a cut of just 29% has so far been achieved.[3] Moreover, this progress is largely the result of national grid decarbonisation and changes in supply chains (Brite Green, 2017a); energy demand by universities has not fallen at all.[4] As discussed below, HEFCE was abolished in 2018 as part of a marketisation agenda in HE, and it is not yet clear how its successor organisations will take up the sustainability remit.

In the health sector, the official advisory body on sustainability for the NHS in England, the Sustainable Development Unit (SDU), also adopted the CCA targets of a 34% reduction in carbon emissions by 2020, and 80% by 2050. This is equivalent to 86% by 2050 relative to 2007, which is the baseline year used in the sector. All NHS providers, commissioners and healthcare organisations are expected to have a Board-approved Sustainable Development Management Plan

(Sustainable Development Unit, 2018). The SDU published a Carbon Reduction Strategy for NHS England in 2009 (updated in 2010) and set an additional target of reducing its 2007 carbon footprint by 10% by 2015. This target was met, and recent figures show a cut of 18.5% to 2017 (Sustainable Development Unit, 2018).[5] The SDU reported in 2018 that, "While the rate of reduction has accelerated over the last two years, this is still behind the trajectory needed to achieve the Climate Change Act 2020 target of 34%, highlighting the need to redouble and accelerate efforts going forward" (2018, p.8). It is also notable that, as in the HE sector, the progress reported to date has been largely through national grid decarbonisation and changes in supply chains (Sustainable Development Unit, 2016a).

The way English health and HE organisations manage energy demand is therefore not just of local significance but likely to have broader implications for national and global carbon objectives.

3.2 | Methods

The research comprised four main phases, as shown in Table 1. Phase one involved qualitative work at three case study sites in England (two universities which we label U1 and U2, and one hospital Trust,

TABLE 1 Research phases, methods, and participants

Phase	Methods	Participants
1. In-depth case study sites	• Interviews with EMPs • Interviews with managers • Documentary analysis • Observational research	**UNI1:** 4 EMPs; 5 managers **UNI2:** 3 EMPs; 6 managers **H1:** 2 EMPs; 3 managers
• Additional institutional study sites	• Interviews • Documentary analysis	**UNI3:** 1 EMP **UNI4:** 1 EMP **H2:** 1 EMP **H3:** 2 EMPs **H4:** 1 EMP, 1 manager
• Sectoral and national level research	• Interviews • Observational research • Documentary analysis • Analysis of published datasets[12]	**HE policy:** 4 professionals **Health policy:** 5 professionals **Cross-sectoral policy:** 1 professional
• Practice-focused workshops	Three workshops for sustainability professionals in the health; HE; commercial; transport; and local government sectors	**Workshop 1 (nationwide)** 12 health sustainability professionals **Workshop 2 (eastern region)** 8 EMPs, various sectors **Workshop 3 (southern region)** 12 EMPs, various sectors

labelled H1). In each site, we carried out semi-structured interviews with one or more Energy Management Professionals. We use the term 'Energy Management Professional' (EMP) to refer to any professional involved in managing energy use, as our concern is with the management of energy demand (including transport demand) within organisations, irrespective of the exact job title.[6] We also carried out interviews with senior and middle managers such as Directors of IT, of Services and of Finance. This phase used 23 interviews in total. We also analysed documents such as policies and monitoring reports, on both energy and non-energy matters, and carried out observational research such as walking tours of the sites.

Phase two then provided a wider, but less in-depth, data-set to complement these case studies, drawing on seven interviews (mostly with EMPs) at two further universities and three further hospitals.

Phase three involved zooming out, by moving our focus to the sectoral and national level. We conducted semi-structured interviews with sustainability/ estates professionals in policy bodies, both governmental and non-governmental (10 in total). We carried out analysis of sectoral and national policy documents and monitoring reports, and reviewed published NHS and HE Estates datasets.[7] Observational research in this phase included attending events such as professional training workshops and conferences.

Finally, in phase four we returned to a focus on EMPs, but broadened our sectoral scope. We organised three participatory workshops with EMPs from the commercial, transport and local government sectors, as well as health and HE (32 participants in total). Overall, our strategy of moving between the institutional, sectoral and national levels, and across these various sectors, aimed to provide rich detail on the processes of institutional energy governance, complemented by a wider view to provide some indication of the applicability of findings across contexts.

An overview of all participants (72 in total) is shown in Table 1, which also shows the codes allocated to each of the institutions studied: the letter-code UNI is used for universities and H for hospital Trusts. Throughout the phases, the selection of participants was designed to provide a holistic understanding of how different organisational functions, services and activities contribute to energy demand, and how demand is governed and managed by a range of different actors and organisational processes. A key difference between our research and most existing work on organisational sustainability is our emphasis on professionals and policies beyond the conventional boundaries of energy and environmental remits. This reflects our commitment to understanding the intersections of energy and non-energy matters.

We found accessing non-energy staff in the health sector challenging, which resulted in our interviews being weighted towards the HE sector (24 interviews in HE compared to 15 in health) and we were only able to set up one in-depth case study site in the health sector. This is why we also ran a dedicated workshop for 12 health sustainability professionals. There was also a gender imbalance, with 25 interview participants being male and 15 female; this was especially pronounced among the 15 EMPs interviewed, of whom 11 were male. The profession has historically been male-dominated, as is

reflected in some gendered language used by our interviewees; an issue picked up in section 5.2.

The interviews were all semi-structured and ranged from 40 minutes to 2 hours duration. Face-to-face interviews were all recorded and transcribed, while notes were taken on the workshops and phone interviews. The data generated were analysed using an inductive thematic method: this was guided by the three research aims listed in section 2.3, and began with an initial exploratory coding phase, followed by a process of clustering related ideas to develop broad themes. We present our findings in sections 4 and 5, weaving qualitative data together with insights from documentary analysis, quantitative data, and relevant literature.

In the discussion sections below, quotes are labelled with the job type of the participant and their institution code; or, for non-institutional policy professionals, their policy sector. This enables us to balance providing relevant contextual detail with our ethical commitment to anonymity, which was guaranteed to all participants.

These methods were adopted to generate rich qualitative insights on energy management within specific sectors and institutions. A corollary of this is that there will necessarily be questions about the generalisability of our findings—beyond our case study institutions, beyond the health and HE sectors, and beyond England. We reflect on this issue in section 6.

4 | PRACTISING ENERGY MANAGEMENT: WHAT IS MARGINALISED WITHIN EMPS' WORK?

This section presents findings on three types of work that are marginalised within EMPs' practices. These are nested, meaning that we progressively "zoom in" on particular areas of EMPs' work. They are:

i. Marginalisation of work focused on *bringing about change* for sustainability;
ii. Within the change-focused work that occurs, marginalisation of work aimed at *engaging with people and what they do*;
iii. Within the engagement work that occurs, marginalisation of work addressing *institutional policies and practices*.

Figure 1 provides a visual overview of how these marginalisations are nested within EMPs' work. Green represents areas that are prioritised, while red represents areas that are marginalised.

We explain each in turn and reflect on what they mean for the scale and scope of energy demand reduction.

4.1 | Marginalisation of action to promote change

We define EMPs as professionals whose role involves managing energy use, but EMPs rarely work *only* on this task, and many have an element of their role focused on maintaining energy services. This could involve managing the supply of power, gas, or other energy resources (whether through utility procurement and on-site generation) and/or maintaining the infrastructures and equipment used to provide specific energy services such as heating, cooling, lighting and transport. These "provision" issues were commonly described by EMPs as dominating their time. For example, one Transport Manager (U1) summed up his role as:

"*Providing the services which, basically, is roads, car parks, cycle racks, cycle provision, the fleet vehicles.*"

Other EMPs spoke of spending much time "*fighting fires*" (EMP, U1) or the demand that "*If something is broken you fix it*" (Former EMP, U2) and described the constant work of repairing faults and addressing user complaints, in line with the findings of Goulden and
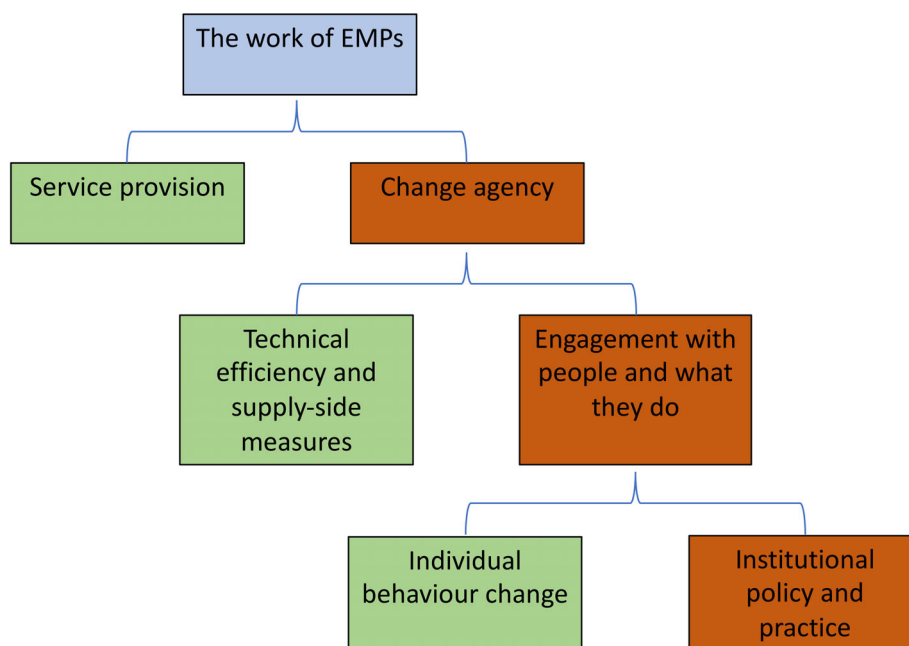
FIGURE 1 Overview of three forms of marginalisation within EMPs' work [Colour figure can be viewed at wileyonlinelibrary.com]

Spence (Goulden & Spence, 2015). One health policy professional explained that change for sustainability can often be deprioritised by EMPs:

"It might not be their priority because there's a lot of risk to deal with, backlogs, or their resources are so stretched that they are just trying to keep the buildings running." (Sustainability professional, NHS agency).

This was especially true of those with energy-focused job titles, as opposed to explicitly sustainability-focused roles. Moreover, those with mixed roles typically focused more on energy than sustainability. The work that EMPs saw as accordingly marginalised was that of bringing about change to reduce energy and carbon footprints. For example, one HE "Energy and Environment Manager" suggested the "environment" part of his role was about change, while the "energy manager" role was about maintaining business as usual:

"A good Energy Manager does things so that people don't even realise that it's been done ... It's business as usual. Nothing is affected. When you get into the environmental side, that's when you should have to start pushing and fighting and changing behaviour." (EMP, U1).

He explained that he was currently not able to do much work on the latter, because he was too busy fixing faulty infrastructure. This was common, with many EMPs regretting that they did not have time or resources to devote even to basic change-enabling tasks such as measuring energy use or developing action plans. When other parts of an organisation are making little or no effort to reduce energy demand, as is often the case, this means overall that minimal attention and resources are focused on this issue. As one HE EMP summed up the situation:

"[Our Carbon Management Plan is] on the front page of the Estates bit of the website, but who looks at the Estates website unless their tap is dripping or they need a car parking space?" (EMP, U2).

Inevitably, this reduces the likelihood of institutions' change-related goals on energy and carbon being achieved.

4.2 | Marginalisation of engagement work

When EMPs did describe work in pursuit of change-focused goals around energy reduction and climate change mitigation, this was most commonly through technical measures to improve the carbon intensity and "efficiency" of buildings, equipment and/or vehicles. These measures include insulating buildings, installing LED lighting, upgrading Building Management Systems, and procuring technically efficient equipment. Moreover, this efficiency work is typically framed around a series of exclusions, each largely relating to cross-organisational engagement.

First, while the efficiency and carbon intensity of building fabric, heating, cooling, lighting and fleet vehicles are seen as within EMPs' remits, more specialised devices such as computers, research equipment and medical equipment are less often considered. Work on these was sometimes described as a challenge, requiring (elusive) co-operation from other teams. For example, one health EMP explained:

"Health departments and services increasingly use scanning technology ... developments in medicine are increasingly high-energy."

[Interviewer: Do you talk to the people that are buying those machines? Do you say, "Could you buy that one and not that one?"]

"... Well, no, they will tell us what they want. Again, from a clinical point of view, they will say, 'This is the machine we want' ... The problem comes if they just buy it and plug it in." (EMP, H2)

However, equipment is a major contributor to energy demand: in HE, lab equipment is responsible for 11% of electricity consumption (BEIS, 2016) while in hospitals imaging and radiotherapy equipment are especially intensive (Morgenstern, Li, Raslan, Ruysseveelt, & Wright, 2016). In the simplest quantitative sense, placing such devices out-of-remit immediately removes potentially significant opportunities for promoting technical efficiency, for instance through equipment procurement.

Second, certain types of energy use and carbon emissions are typically excluded from EMPs' technical work. Under a widely used framework, there are three "Scopes" of emissions (Putt del Pino, Larsen, & Levinson, 2006): Scope 1 refers to direct emissions from buildings and vehicles, owned and managed by the organisation, Scope 2 to purchased grid electricity, and Scope 3 to all indirect emissions, including those associated with procurement, waste, and non-fleet travel. Of these, Scope 3 is the largest contributor to total emissions with the health and HE sectors. In health, energy use in buildings accounts for only 15% of NHS carbon emissions, while 72% are from procurement and 13% from transport (NHS Supply Chain, 2014). Similarly, one study of a UK university found that Scope 3 emissions comprised around 79% of its total emissions (Ozawa-Meida, Brockway, Letten, Davies, & Fleming, 2013), while elsewhere it has been estimated that "including procurement could double the sector's overall emissions figures" (HEFCE, 2010, p 10), procurement being only part of Scope 3. Yet Scope 3 is typically marginally to EMPs' work. In HE, Scope 3 is largely ignored: *"We haven't really given it any thought, to be honest,"* confessed one manager (Senior Manager, U1).

In health, meanwhile, although stated targets do tend to include Scope 3 and there is increasing attention paid to issues such as procurement and waste (e.g., Sustainable Development Unit, 2012, 2016a), EMPs described major challenges in implementing action on these issues, including around cross-organisation collaboration (discussed further in section 4.3). Also, across both sectors hybrid and public-private forms of ownership and management are increasingly common. These "grey areas" can contribute to data access and reporting problems, and the exclusion of certain sites from EMPs' focus. Taken together, these various exclusions mean that, especially within HE, there is often not even recognition of the extent of organisational energy and carbon footprints, let alone comprehensive efforts to address them.

Furthermore, while technical work dominates EMPs' change-focused activities, there is less work aimed at engaging with what their colleagues, clients, and wider institutions actually do. For example, one HE EMP admitted:

"The Carbon Management Plan says we'll have a Behavioural Change campaign ... but we've never done one." (EMP, U2).

Several interviewees expressed a wariness about such activity, with one health professional saying:

"*If you ask critical care staff to turn a light off it might not go down too well!*" (Clinical team leader, H1).

Meanwhile, an HE EMP said of scientific researchers:

"*Well, should they have to be [reducing energy]? ... Activity has to happen. I can't say to someone who is working ... they might be on the cusp of a cancer-curing drug, or practice, or medicine or something, and I turn around and say,* "*Right, come on then lads, off you go!*" "(EMP, U1).

A health professional described how she implemented a behaviour change campaign in a previous institutional role:

"*The backlash was awful, the climate change non-believers let rip, hiding and trolling. I thought, I don't like this, I'm not used to this. This was staff, internally.*" (Sustainability audit professional, NHS body).

However, this was not universal, and some sector-level professionals suggested this type of work is increasingly valued.

More fundamentally, both EMPs and wider socio-political discourses tend to consider efficiency as a property of specific technologies—they rarely consider the "efficiency" of how services are designed and delivered, or of how needs can be met. It has been argued compellingly elsewhere (Shove, 2018) that such a narrow definition of efficiency not only fails to facilitate significant cuts in energy demand, but can reinforce high-energy using modes of practice. Our analysis of reports on energy and carbon performance at the organisational and sectoral levels supports this contention: in many publications, gains in efficiency are highlighted while absolute increases in energy demand or emissions are reported in small print, if at all. Techno-optimist statements (e.g., EAUC et al., 2015; and UUK, 2015) promote the panacea of efficiency, sometimes playing down the fact that institutions are performing poorly in absolute terms (see, for example, Brite Green, 2017b). At the same time, EMPs described a recent shift towards a focus on discrete, standalone "projects" aimed mostly at technical efficiency, as opposed to concerted, progressive action measured against absolute date-specific targets (discussed in section 5.2 below).

In this context, it is unsurprising that targets are not being met. Ultimately, there is an obvious incommensurability between the technical measures that professionals themselves call "bog standard" and "old school" and the energy transition that is needed. The dominance of technical efficiency work—itself defined narrowly—and the corollary marginalisation of work engaging with people and what they do, serves to severely limit the scale and scope of demand reduction efforts in many institutions.

4.3 | Marginalisation of institutional practice

Having said this, many EMPs (especially those with sustainability-focused job titles) do spend at least some time thinking beyond technical projects, and engaging with people across their organisations and what they do. But within this "engagement" type work, we identified a further form of marginalisation, namely a focus on *individual user behaviours* at the expense of *institutional practice*. EMPs' engagement work tends to be within a framework we can characterise as "user behaviour change", often involving providing information or small incentives in an attempt to promote minor changes in everyday routines. For building-focused EMPs this often meant turning off unneeded lights and computers: "*We keep encouraging people to turn stuff off*" (EMP, H1). For transport professionals, it was largely about shifting modal choice from private cars to public transport, cycling and walking. The targets, whether these are staff or service users, such as students or patients, are understood as "building users" or "transport users".

An alternative, or additional, way to carry out engagement work would be to look at staff as service providers who make decisions about that service provision, and to focus their activities within the realm of professional practice; for example, the appointment of suppliers for goods procurement, the medicines prescribed, the location of service provision and so on. In other words, EMPs could consider what doctors do *as doctors*; and researchers as *researchers*. However, they rarely do this particular kind of engagement work. A powerful example of the potential scale of change in professional practice (as opposed to just user behaviour) is provided by research (Sustainable Development Unit, 2016b) which shows the estimated carbon impact of 35 proposed measures in the health sector. Table 2 shows an extract from this report. While conventional staff behaviour change does offer large potential "savings",[8] a range of measures involving new ways of delivering healthcare, or reducing the overall need for health services, also offer very significant—and in some cases, much greater—potential emissions reductions.

It therefore seems evident that greater progress on energy and carbon could be achieved if attention was paid to professional practices as well as to employees' use of light switches, bikes, and so on.

Importantly, these professional practices may not be within the discretion of individuals to change, but require changes to organisational protocols, job descriptions, Key Performance Indicators (KPIs), professional guidelines, and procurement policies. However, EMPs' work tends not to feed into organisational strategies other than

TABLE 2 Carbon-saving measures in the health sector, adapted from Sustainable Development Unit (2016, p.11)

Carbon-saving measure	Tonnes CO2e saved in 2020 (estimated)
Reducing fuel poverty through referrals for home insulation	17,400
Smoking cessation (reducing future need for health services)	42,200
Staff energy awareness and behaviour change	75,100
Psychiatric liaison (better mental health services for accident and emergency attendees, to reduce repeat visits)	84,500
Prescribing non-propellant inhalers for asthma	341,000

those specifically on energy and sustainability, narrowly understood. Some EMPs reported that they were not even kept informed about major organisational plans. For example, one EMP explained how a plan for major expansion of the University had not been taken into account when a Carbon Management Plan was drawn up, because:

"*I don't think it was on the radar of the people who wrote the Carbon Management Plan ... I'm sure that elsewhere in the university [it was known about] ... It may even have been that they didn't want other people to know at the time*". (EMP, U2).

The EMP explained that she believed this growth plan would render the targets in the Carbon Management Plan impossible to meet. Another energy manager said she had been systematically excluded from decision-making processes around major investments in energy-supply technologies:

"*... I haven't ever been invited to any meetings ... I haven't been invited to be involved even in an email discussion ... it's appalling communication and it's an absolutely farcical situation.*" (EMP, U3).

Even if we accept that organisations will have multiple and often contradictory objectives (e.g., Sundström & Holmberg, 2018), this fragmented way of working inevitably limits the impact of EMPs' demand reduction efforts. This marginalisation of strategic work is not universal: it is sometimes possible for EMPs, especially in sustainability-focused roles, to feed into the development of non-energy policies, or make creative use of opportunities to shape the wider work of their organisations. For example, one sustainability professional at the Southern region workshop described implementing change through the wording of procurement contracts. At the sectoral level, the NHS Sustainable Development Unit is working to promote shifts towards more sustainable modes of service provision, and has created a "Models of Care" module within its Sustainable Development Strategy (Sustainable Development Unit, 2014), with detailed guidance for implementation in institutions. However, in interviews, this kind of activity was rarely mentioned as part of the main day-to-day work of EMPs.

In summary, we have observed a series of nested forms of marginalisation within EMPs' work that have implications for the scale and scope of energy demand reduction efforts. We turn next to the question of how and why these patterns are reproduced.

5 | HOW AND WHY DO THESE PATTERNS OF MARGINALISATION EMERGE?

In order to understand these patterns of marginalisation, we need to consider the intersections of professional practices, institutional arrangements, and wider socio-political landscapes—all of which are constantly changing. To do this, we focus on three connected themes; first, the impacts of national policies on organisational priorities; secondly, issues of remit and organisational structure; and thirdly, the broad theme of neoliberal governance. We focus on the time period since "energy management" became an explicit focus for organisations, in the 1970s.

5.1 | National policies and organisational priorities

Throughout the data there runs an underlying issue of organisational priorities. The tension between service provision and change management is not inevitable. Certain forms of change, for example growth and cost-cutting, are organisational priorities across the health and HE sectors, and are embedded in the work of many different professionals through KPIs, job descriptions and budgets. Other agendas, by contrast, are considered peripheral to core business, and receive less focus and resourcing (Sundström & Holmberg, 2018), energy and sustainability being cases in point. This reflects historically contingent external policy priorities, in at least two ways.

First, the EMP role and its status and resourcing closely reflect the changing place of energy issues on national political agendas. The energy crisis of the 1970s first prompted the emergence of energy management as a concern for institutions (Smith & Parmenter, 2016), though attention dwindled somewhat when prices dropped. Increased environmental concerns from the 1980s, and the climate change agenda in the 2000s, drew renewed attention to energy management as a field, bolstered by environmental legislation including EU directives on energy. In the UK, climate-focused policies reached their apogee immediately after the passage of the CCA in 2008, with institutions recruiting carbon managers and publishing carbon plans. This reflected a wider emergence of new professions in response to agendas of corporate responsibility, sustainable business, and environmental auditing (Dixon, Mousa, & Woodhead, 2004; Hesselbarth & Schaltegger, 2014).

However, EMPs described how this was followed by an ebbing of interest associated with shifts in political and financial landscapes since 2010. This seems to have left some "relic" organisational policies and objectives, which exist on paper but actually have little power or relevance, or are incompatible with other institutional goals. One EMP admitted: "*There is a policy [on international travel]. We just don't do anything about it*", explaining it was a relic of an old Carbon Management Plan (EMP, U2). EMPs are therefore left attempting to resolve contradictions between residual and current objectives. Moreover, EMP roles may themselves be somewhat 'relic', legacies of an institutional enthusiasm for sustainability which has since waned. In several cases, although their role still existed, their informal remit and influence appeared to decline, for example, with the "fizzling out" of cross-organisational groups they tried to maintain. One EMP said of a Carbon Management Steering Group, "*It didn't even get abolished. We just stopped having it ... it just fell to bits*" (EMP, U2), explaining this was due to lack of interest and commitment. Another noted, "*We have a Carbon Management Programme board ... it does still exist but attendance at recent meetings has been embarrassingly appalling*" (EMP, U3). Similarly, a health EMP said of a Sustainability Steering Group:

"*We kept running it but, essentially, the nature of priorities in the hospital meant that people just couldn't come. We'd go along and the only people there would be the team.*" (EMP, H2).

Second, EMP's work also reflects wider changes in policy landscapes beyond those associated with energy or climate specifically—what can

be thought of as changes in "non-energy policy" priorities (Royston et al., 2018). The regulation of the English HE sector is a case in point. Until 2012, HEFCE was the main funder of English universities and was beginning to link its funding to their compliance with national carbon policies. However, from 2012 HEFCE's funding role was significantly reduced as a result of sector marketisation, leading various professionals in HE to describe it as a "*paper tiger*" (Senior manager, U1) with no "*teeth*" (a term used by both a HE policy professional and a service manager at U2). In the ensuing policy vacuum some universities removed their absolute carbon targets, adopted lower targets, and/or stopped updating carbon plans. This shift is obviously linked to neoliberal governance, as discussed below.[9]

5.2 | Institutional structures and professional practices

Our data suggests that the dominance of service provision work is directly related to institutional arrangements. In some cases the positioning of EMP roles within Support Services can mean that their efforts at pursuing change are viewed as illegitimate:

"*We're just Building Services, we are here to serve the staff and students ... It was the director of FM who was telling me to focus on buildings, not user engagement. Because FM is a support service, it wants to not be seen. If something is broken you fix it. You enable, you support, you don't put up barriers*" (Former EMP, U2, now working in health).

In other cases, formal role definitions include both service provision and change work but in practice the former takes priority over the latter:

"*You tend to find that if the consumption side gets subsumed within the operations side, then not a lot moves in terms of trying to manage the consumption*" (EMP, H2).

This tension between service provision and change is also noted by Goulden and Spence (Goulden & Spence, 2015) and Aune et al. (2009), and may be a legacy of EMP's origins in energy engineering and estates management. In the 1990s energy management roles focused on energy provisioning and utility purchasing, responsibilities that were typically undertaken at lower professional grades as an offshoot of other roles (e.g., site manager, clerk of works). In the 2000s, a series of political developments, as described above, facilitated the emergence of dedicated energy management roles (Gosling, 2015). Sustainability and change-focused roles are increasingly common, especially in businesses. The evolution of EMP professions continues to occur in patchy fashion, leaving some EMPs with a hodge-podge of not always commensurable responsibilities. As the EMPs' quotes above suggest, more specialised and differently positioned roles might avoid the dominance of service provision. Larger organisations are obviously more likely to allow for such specialised roles. One EMP compared his situation (as a lone manager of energy and sustainability matters) to that of another institution:

"*They do have a team and it does help, if you've got someone whose sole responsibility is Carbon Reduction Commitment and legislation or things like that.*" (EMP, U1).

The dominance of technical approaches to change also appears linked to four aspects of EMP professional practice. First, technical change, especially when aimed at "efficiency", enables EMPs to keep things working and facilitate business as usual while simultaneously promoting sustainability (Strengers, 2012). For example, when a health EMP explained why he was working on what he called "*pure engineering based projects ... in the boiler house*", he said these were easier to implement because, "*They [staff] won't even see or get to know what is going on ... Those kinds of projects are actually invisible to them.*" (EMP, H3). By contrast, change focused on staff behaviour may be seen as invasive and prompt a "backlash" from critics, as described by one health EMP above, with similar tensions mentioned by several other EMPs across sectors, for example: "*You get oppositions. I used to call them arguments, I now call them discussions*" (Transport manager, U1). Managing such tensions was a key theme of discussions at all three workshops. This echoes ideas in behaviour change literatures about certain types of intervention being seen as intrusive or overly paternalistic (e.g., Hansen & Jespersen, 2013).

Second, this dominance of technical approaches is in line with the wider "projectification" of the UK corporate (Midler, 1995) and public (Hodgson, Fred, Bailey, & Hall, 2019) sectors since the 1990s. Projectification involves a shift away from constant, on-going measurement and management towards the implementation of discrete 'projects', as described in section 4.2. For example, one Health EMP (H3) had recently had their job title changed from Energy Manager to Energy Projects Manager. Projectification represents a change in the governance and temporality of EMPs' work, meaning that a series of short-term and usually technical or behaviour-change interventions are launched and celebrated, while long-term outcome-based targets that potentially trouble core business objectives are withdrawn or ignored. As one health EMP frankly explained:

"*It's hard to have real ones [carbon targets] at the moment. At the moment, it's really about trying to reduce energy as best we can through ... various savings projects, but we know they only really scratch at the surface*". (EMP, H2).

Funding schemes, awards and the strait-jacket of the "business-case", discussed below, can all reproduce the dominance of short-term project-based work.

Third, the technical focus is also a legacy of energy management's roots in engineering and estates and facilities management. Many EMPs have training or experience in these techno-centric professions (which are also traditionally male-dominated, perhaps contributing to the gender imbalance amongst EMPs in this study). One health policy interviewee distinguished between "old school" and "younger" EMPs, saying that she saw the former as focused on service provision and technical efficiency:

"*Energy managers fall into two camps ... Some are proactive, especially the ones that aren't purely energy managers, that have sustainability in their remit too. Some are really good. Especially the younger guys. But also, old school energy management happens ... They just do bill validation ... lighting, energy centre stuff, insulation on the pipework. Very basic stuff. But the profession is shifting*" (Health policy professional).

Last, the dominance of technical measures is linked to EMPs' tendency to get "*stuck in the Estates department*" (in the words of a health sustainability professional, observed during a training workshop), and to focus on measures where sign-off powers, resources and expertise are within the Estates team, rather on ones which require engagement with other teams. Institutional arrangements for cross-organisational working are often weak. This was especially pronounced when the relevant departments—or even the EMP role itself, as in the case of two of the institutions studied—were outsourced to a contractor, or when negotiations were needed over hybrid spaces (as described by EMPs at U1, U2, H1, and H2).

As described above, cross-organisational working groups suffered from a lack of interest or commitment from non-energy staff. Similarly, a health professional explained:

"*Most estate managers and IT managers don't communicate. The IT managers just say*: '*You pay the electricity bill. We need working air conditioning!*'" (NHS sustainability professional).

These challenges help explain the lack of work on institutional policies, as organisational hierarchies and silos may not make it easy for EMPs to get involved with decision-making outside their core remit.

5.3 | Facets of neoliberal governance: The "business case", efficiency, and individual responsibility

The preceding sections have touched on issues of sector marketisation and outsourcing, and within this final theme we look more closely at processes associated with neoliberal governance. Recent decades have seen a well-documented shift towards service delivery through markets and hybrid public-private relationships (Walsh, 1995), alongside new forms of metricisation (Beer, 2016) and outsourcing (Jordhus-Lier, 2012). These changes have myriad ramifications for energy management. First, EMPs must demonstrate a "business case" for any proposed intervention, tied to increasingly rigid rules and assumptions around metrics and payback periods. This is inevitably easier for a bounded technical project like a lighting upgrade than for long-term work on institutional strategies. Some health professionals (during observation at a sector sustainability event) also explained that these limitations are exacerbated by short-termism built into budgeting procedures. This is also true in wider policy-making. For example, the nationwide Carter Review of Productivity in Hospitals (Carter, 2016) spearheaded a drive for cost-efficiency across the acute health sector. Calling for lower spending on energy, and at the same time for cutting spending on "back room" staff such as EMPs, this Review epitomised a short-termist approach to efficiency that extends far beyond individual institutions.

Neoliberal modes of thinking and governance also steer the ways in which EMPs work with people. Behaviour change, focused on voluntary individual choices, may be seen as more legitimate than efforts to create more deeply-embedded structural change that might affect professional practices without the consent of all staff members. This echoes discourses about individualised responsibility for addressing global environmental crises, which have been widely debated elsewhere (for example, by Walker, 2015). As Gormally, O'Neill, Hazas, Bates, and Friday (2019) suggest, neoliberal narratives can have a powerful effect in steering how university researchers use energy; such narratives may also affect how energy management is understood by EMPs across sectors, and how they and their institutions understand the limits of legitimate intervention. Of course, these effects are not static. Perhaps most importantly, in both the English HE and health sectors processes of marketisation are, in different ways and to different degrees, associated with a growing privileging of customer experience and short-term economic priorities. Our findings suggest that such trends may make it increasingly unlikely that EMPs will work for change—especially changes that demand significant long-term transitions in institutions' ways of working.

6 | CONCLUDING DISCUSSION

In summary, we have identified three nested forms of marginalisation in EMPs' work. First, emphasis on service provision can leave change-focused work marginalised and under-resourced. Secondly, there is a tendency to focus on making technical changes (and on certain types and sites of technical change at that), rather than on changing what people do. Arguably, this narrowly technical, project-driven approach fails to deliver progress against absolute targets and can even obscure and legitimise this gap. Finally, when EMPs do work engaging with people and their activities, this typically focuses on individual "user behaviours" rather than longer-term institutional policy and practice. As the carbon modelling in Table 2 shows, there are also opportunities to achieve demand reduction through long-term changes in how institutions provide services, opportunities that are often ignored (Sustainable Development Unit, 2014). In the language of organisational management studies, it appears that energy management is largely approached as an operational rather than strategic issue. We have also shown how these patterns follow from interacting dynamics of national policies and priorities, institutional structures and professional practices, and the creeping penetration of neoliberal governance.

Do similar forms of marginalisation occur in other institutions within the English sectors considered here? It is important to stress that every organisation has its own particular dynamics—not just its own "management styles" and formalised structures and procedures, but also its own ways of knowing, shared meanings and memories, and embodied competences. Our study has drawn in-depth data from a small number of institutions and thus does not claim to provide a comprehensive or universal representation. However, we argue that similar forms of marginalisation are likely to occur across English health and HE institutions. We base this suggestion on our sectoral and national level interviews, which point to the same patterns as those observed in our case studies (for example, on the challenges of engaging non-energy professionals with energy issues), as well as on the evidence of extensive sharing of practices across organisations.

EMPs' careers frequently involve moving between institutions, and they are often active participants in professional networks—attending conferences and training events, subscribing to email lists and undertaking benchmarking and comparison exercises. Outsourced facilities management companies also play a role in sharing practices within (and between) sectors.

Are other sectors likely to see comparable processes? We are more cautious here, not least because the two sectors we focus on here have their own unique features, and every sector's specific governance regime—whether public, private, third sector or hybrid—will affect how energy management is practised. As discussed above, the shift in English HE from a public to a largely marketised regime has had major impacts on energy management, removing much of the framework of targets, reporting and incentives that had been steering institutional change for sustainability. This suggests that public and private sectors may be quite different in their modes of energy governance and the opportunities and challenges that arise. Furthermore, social, economic and technical contexts will affect different sectors in very different ways, for example, through their differentiated vulnerability to global economic fluctuations.

That said, there are some grounds for thinking that many of the tendencies identified above are common across sectors. There are striking similarities between the health and HE sectors analysed here. Moreover, EMPs often move between sectors, sharing understandings of professional practice between them. In addition, attendees at our workshops—who came from many different sectors, including the private sector—repeatedly identified similar problems and experiences, such as the primacy of the "customer", whether patient, student or client, in limiting the scope of legitimate interventions for energy demand reduction, and the challenge of escalating expectations around the level of service provision.

Regarding other countries, we must be still more careful in any generalisation. National policy frameworks related to both energy (e.g., carbon targets) and 'non-energy' policies (e.g., marketisation), and differing social, technical and economic landscapes, deeply affect EMPs' practices. However, the cross-national literature on EMPs and energy management reports broadly similar challenges and tensions across different national contexts (e.g., Ates & Durakbasa, 2012; Elmualim et al., 2012; Ivner et al., 2014; Kannan & Boie, 2003; Kurland & Zell, 2010; Min et al., 2016; Visser & Crane, 2010), as does the literature on environmental policy integration (e.g., Jordan & Lenschow, 2010; Dupont, 2016; Di Gregorio et al., 2017; Jacob & Kannen, 2015; Kettner & Kletzan-Slamanig, 2020). Equally, important trends such as liberalisation, professionalisation, and projectification have been identified across the global North, though playing out in nationally and organisationally specific ways.

We also wish to reflect here on the issue of causation. EMPs' practices are by no means the sole influence on energy demand, especially given major changes in many institutions' size and volume of activity. We emphatically do not attempt to isolate and compare the impacts of such "factors" in determining energy demand. Also, in reflecting on how energy management might be done differently, we do not mean to suggest that professionals have the power to directly and deliberately bring about transformations in practices or institutions. As noted in section 2, we understand professional practices and institutional structures to be mutually constitutive: the agency of practitioners interacts with organisational arrangements that form part of the "architecture of practice" (Kemmis, 2009). That said, professionals are "potential manipulators and mediators" (Strengers, 2012) of institutional arrangements and practices, within particular contexts. In particular, senior-level institutional and sectoral decision-makers are in a position to help steer arrangements for energy management, and it is worthwhile to reflect on how they might do this differently.

Based on our findings, we therefore propose that the following questions be considered by institutional and sectoral decision-makers:

i. How can EMPs be actively engaged in, or at the very least, informed about, the development of organisational plans, to help ensure energy matters are considered in non-energy strategies, and vice versa? What institutional structures, such as hierarchies of reporting, could be adapted to facilitate this?

ii. How can the intra-organisational positioning and definition of EMP roles be rethought—for example, their locations and remits within Support Services, and the formulation of Key Performance Indicators—to allow greater focus on change, and especially strategic change?

iii. Are the current human and financial resources devoted to energy management consistent with organisational energy objectives; what additional roles and investments might be required?

iv. How can cross-organisational engagement be embedded as a long-term shift in ways of working, and used to foster demand-reduction in a wide range of institutional practices, such as procurement and service-provision?

Focus on these issues would represent a first step in rethinking energy management and potentially broadening the scale and scope of its impacts. However, as we have shown, changes in energy management at the institutional level would be unfeasible and ineffective without wider change. This means, among other things, strengthening the current frameworks of energy policy. Of the sectors we studied, this is especially clear in relation to HE. In 2018, following the abolition of HEFCE, the new regulator for teaching, the Office for Students (OfS) announced that universities in England would not even be required to even publish data on their energy and carbon performance—at the time of writing it is consulting on a "less burdensome" alternative reporting framework (Office for Students, 2020, p 4). The OfS recently stated that it "does not currently have any funding dedicated to carbon reduction in the sector ... We do not have the powers to set an emissions reduction target for the sector" (2020, p 4). However, it is currently considering ways to promote sustainability, as is the sector's other post-HEFCE regulator, UK Research and Innovation.[10] An immediate policy recommendation is for the new regulators to, at the bare minimum, return to the pre-2018 position by providing clear targets, guidance and financial incentives for institutions to cut energy and carbon. While the policy regime in

health is clearer, there is still great scope to provide additional funding and powers to the NHS Sustainable Development Unit, which currently operates mainly in an advisory role, with a very small staff.

Our findings also speak to broader debates about sustainability governance. The experience of HEFCE's targets becoming irrelevant and ignored when it lost its capacity to impose financial penalties supports the idea that voluntary target initiatives are unlikely to be effective. This is especially relevant to the current policy landscape in England, where a purely voluntary emissions target for the public and HE sectors in England was introduced in the Government's 2017 Clean Growth Strategy.[11] Our research thus reinforces the argument, made extensively elsewhere (e.g., Aakre, 2016; Barrett, 2008; Haug et al., 2010; Southworth, 2009) for climate-change mitigation policies to go beyond voluntary approaches and implement binding and enforceable governance mechanisms. Absolute targets with mandatory reporting and meaningful incentives and/or enforcement, at both the institutional and sectoral levels, are necessary for creating a context for change. This also echoes the lessons that have been learned through attempts to integrate other agendas into institutions' policies and practices. For example, the gradual and ongoing "mainstreaming" of equality and diversity issues, and of health and safety culture, has been supported by legislation at various scales (e.g., Badri, Boudreau-Trudel, & Souissi, 2018; Dickens, 2007). Moving such matters from the realm of optional "corporate social responsibility" into the realm of "compliance" is one way to foster meaningful cross-organisational action and investment in the long term.

As outlined in section 2.1, this paper contributes to a newly-emerging practice-theoretical literature on organisations and sustainability. As such, our in-depth study of the doing of energy management serves as a useful empirical demonstration of the value of going beyond the physical-technical-economic model that still dominates work on energy in organisations. We show how the scale and scope of demand reduction are limited not only by information deficits and payback periods, but also by tacit forms of marginalisation that render certain types of intervention largely "off limits". In this way, we make advances in addressing Lutzenhiser's (2014) research agenda, while highlighting some further dynamics, such as the history of professions and the influence of neoliberal governance agendas, that future work in this field could usefully engage with. In relation to research on organisations, our work sheds new light on the challenges to institutional change—going beyond concepts of "barriers" to offer a rich understanding of how everyday performances, institutional arrangements and wider socio-technical and political contexts intersect to create and maintain the boundaries of legitimate agency for change. The insights here thus help to further develop the vibrant field of practice-theoretical scholarship on organisational change.

Finally, our research also speaks to fundamental questions in sustainability research about how resources, demand and efficiency are conceptualised. The flawed assumptions that energy policy is distinct from non-energy policy, and that technical efficiency measures accompanied by individual behaviour change are adequate to addressing sustainability challenges are not just characteristic of specific organisations, but of discourses prevalent across diverse policy and research fields (Royston et al., 2018; Shove, 2018). Our analysis

here serves as an empirical demonstration of how such discourses become embedded and enacted through the institutional arrangements of sustainability governance, and how they constrain the scale and scope of change in this context. At the same time, by highlighting various processes of evolution, we show that the status quo is not fixed—and by extension that the governance of energy demand and other critical sustainability matters could be done differently in future.

DATA AVAILABILITY STATEMENT

Data relating to this study will be made available at The UK Data Service ReShare platform, following anonymisation: https://reshare.ukdataservice.ac.uk/.

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ENDNOTES

[1] Up-to-date figures for the transport demand of institutions are not available; however, the scale of the demand of the health sector is evidenced by the fact that 3.5% of English road traffic is linked with the NHS (Sustainable Development Unit, 2018).

[2] Source: HESA Estates data: https://www.hesa.ac.uk/data-and-analysis/estates [accessed January 28, 2020]. Note that reporting methodologies differ by sector, so data should not be treated as directly comparable across these sectors. Reported figures are provided for indicative purposes only.

[3] Estates data provided by HESA (as above),

[4] Analysis of Estates data from HESA (as above), from 2008/09 to 2017/18, showed an increase of 1% in energy consumption for UK universities.

[5] During this period monitoring was expanded to include the whole health and social care system in England.

[6] The category of EMPs is therefore diverse, and we recognise and reflect on this in our discussion sections below. We did not observe significant differences in the nature and definition of EMP roles between the health and HE sectors.

[7] See Wadud, Royston, & Selby, 2019.

[8] We note that the idea of savings contains embedded assumptions about levels of service provision, which we do not have scope to unpack here (see Shove, 2018).

[9] HEFCE was abolished in 2018. At time of writing in 2020, sustainability strategies are still under development by the two new regulators, the Office for Students and UK Research and Innovation.

[10] See https://www.ukri.org/about-us/policies-and-standards/sustainability/ [accessed March 18, 2020]

[11] https://www.gov.uk/government/publications/clean-growth-strategy [accessed March 18, 2020]

[12] See Wadud, Royston, & Selby, 2019.

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