How can energy demand research advance racial justice? The case of the UK

Uttara Narayan[1]*, Sarah Higginson[2] and Nick Eyre[3]

Centre for Research into Energy Demand Solutions, Environmental Change Institute
University of Oxford, South Parks Road, OX1 3QY
1: e-mail: uttara.narayan@ouce.ox.ac.uk, ORCID: https://orcid.org/0000-0003-1029-0868
2: ORCID: https://orcid.org/0000-0001-7605-7490
3: ORCID: https://orcid.org/0000-0002-6823-9646

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Abstract

Topic 4: A fair and inclusive energy transition

This paper shares findings from research at the intersection of energy demand and racialisation — an under-researched topic in Europe. We sought to understand the reasons for this gap, and identify potential approaches to address it in the UK, through a scoping literature review, semi-structured interviews and a stakeholder workshop. The scoping literature review identified 36 publications that focused on energy and racialisation. The majority of these were about the United States, used quantitative methodologies, and performed analysis at the city and national-level, especially in the residential sector, and also focused on energy demand. Participants for semi-structured interviews (n=27) and one project workshops (n=45) were identified among energy demand and social justice researchers and practitioners. Interviews covered understanding the current situation (at an experiential and structural level), aspiration (through a pluralistic definition of racial justice), and learning from other agendas like gender and energy. The workshop was used to obtain feedback on emerging insights. Thematic analysis revealed the following areas for further investigation—Energy services where people demonstrably experience racialisation, namely, built environment, transport, health, and food; Processes through which racialised people are disproportionately impacted by energy system governance, especially with respect to energy demand practices, low-carbon technologies, energy advice services; and Methods to strengthen the evidence's explanatory power in a non-extractive manner. The paper concludes with a call to further research on the diverse energy practices and needs of racialised people, thereby challenging assumptions around an archetypal low-carbon energy consumer and its implications for energy justice.

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1. INTRODUCTION

Consequent to the George Floyd protests and the global resurgence of the Black Lives Matter movement in 2020, the Centre for Research into Energy Demand Solutions (CREDS) realised that there was a dearth of research at the intersection of energy demand and racial justice, especially in the context of the United Kingdom, its primary geography of focus. In response, CREDS commenced scoping research to understand this gap and is building towards a research agenda to further racial justice in energy demand research (Higginson & Fadare, 2022).

While it is important to understand how, when, what and how much energy is demanded, it is equally important to understand *who* uses this energy, and how they are able to use it. In this research, we focus on how racialisation ascribes 'racial' meaning to people's everyday identities, positions and values largely through structural and institutional mechanisms that results in affective as well as material consequences, including unequal access to opportunities and services that disadvantages their overall well-being (Bonilla-Silva, 2020; Meghji, 2020). At the societal level, with varying degrees of evidence, racialisation is experienced as—adults belonging to ethnic minority groups being more severely affected by the ongoing cost of living crisis (ONS, 2022); austerity measures reducing welfare benefits and discriminating against racialised social groups (Bhambra & Holmwood, 2018; Edmiston, Begum, & Kataria, 2022); language barriers to obtaining consumer advice, as English might not be their first language and a hesitation to avail state benefits that they might be eligible for, owing to not feeling eligible for such benefits (Hodges, Schmidt, & Becker, 2022); unequal healthcare provisioning and well-being, especially in the wake of COVID-19 (Camargo, 2020; Public Health England, 2020); unreliable access to green spaces (The Ramblers, 2020); households categorised as 'ethnic minority' tending to live in more overcrowded and dilapidated housing conditions (The Health Foundation, 2023); greater incidence of homelessness, as one is three homeless people in London are non-white (Gulliver, 2017); more severe experience of fuel poverty, as 75% of recent migrants (those living in the UK for less than 5 years) are in the private rented sector, which has some of the poorest energy efficiency ratings (Bouzarovski, et al., 2022); tendency to be situated farther away from access to essential services and public transport options, increasing their risk of transport poverty (Gates, et al., 2019).

Investigating the racialisation of the energy system requires understanding it at a societal level, and specifically exploring how this might manifest within the energy system (Figure 1)—firstly, who is assumed to be a typical energy user or early adopter of technologies that will aid in rapid decarbonisation? What does that mean for those who might not fit that assumption in terms of accessing the services and technologies to assist low-carbon practices? (Newell, 2021; Middlemiss, 2022). Secondly, do we understand the diverse and complex energy needs and practices of racialised people? How responsive or inelastic could those practices be to what is considered popularly as low carbon lifestyles? (Owen, et al., 2023). Finally, are existing opportunities to participate in the energy system racialised, thereby contributing to unfair decisions? Could that affect the way problems are defined and solutions are designed? This paper raises these questions, as current research on these topics is limited in scope, contexts and methods, specifically in the UK but more widely across Europe as well. It is intended as a framing paper to initiate further conversations and commitment towards anti-racist energy demand research.

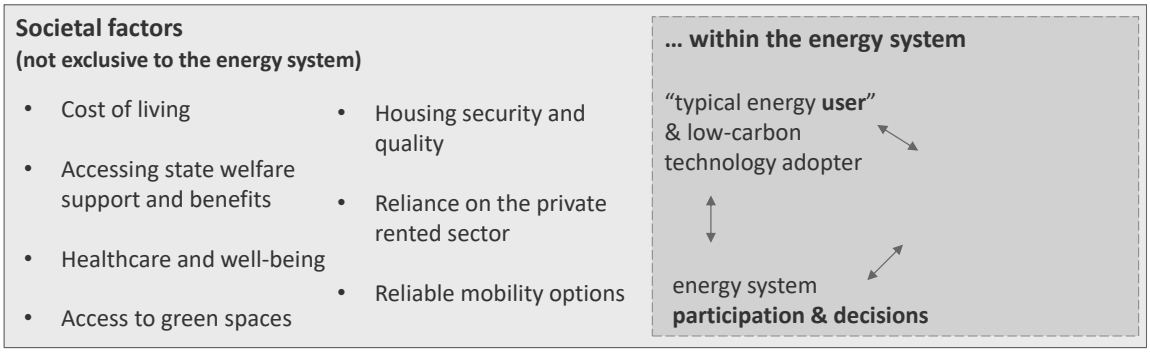

Figure 1: Is the energy system racialised?

2. BACKGROUND: SCOPING LITERATURE REVIEW

We carried out a scoping literatire review that focused on publications where race or ethnicity were central themes in exploring research on the various dimensions of energy. The review focused on four broad themes—(a) different dimensions of energy (across demand and supply) and their interaction with racialised factors, (b) energy justice, fuel poverty and just transitions, (c) social theories applicable to energy research (such as energy sociology, structuration, etc.), and (d) the UK's historic landscape of racialisation. This search shortlisted 36 publications, which demonstrated the characteristics illustrated in Figure 2.

Most studies that consider energy and any aspect of racialisation pertain to the United States. The studies are largely focused on the national level, followed by city-level analysis. This can potentially be explained by the focus on the US, where most studies of racialisation focus on inner-city experiences. While it is instructive to draw inspiration from this existing work, it is also important to recognise the differences in the organisation of the energy systems among these contexts, and their histories of racialisation. Quantitative analyses dominate the scoping review sample, being nearly double those of qualitative approaches. We observe an almost equal balance between primary and secondary data, but it is the availability of secondary data that allows for larger scale (such as national-level) quantitative studies. While the broader environmental and climate justice narratives have focused on the extractive nature of the energy system, be it in terms of siting infrastructures, mining or pollution and their impacts on local communities, studies that focus on race and energy are focused on energy demand—in terms of exploring residential energy efficiency around heating and lighting, weatherization/ energy retrofitting/ fabric improvement, or around ability to access energy advice especially in coping with energy poverty. And therefore, we see that this research also focuses to a greater extent on the residential sector, though we should also explore what it means for other sectors with a significant and growing energy demand such as transport.

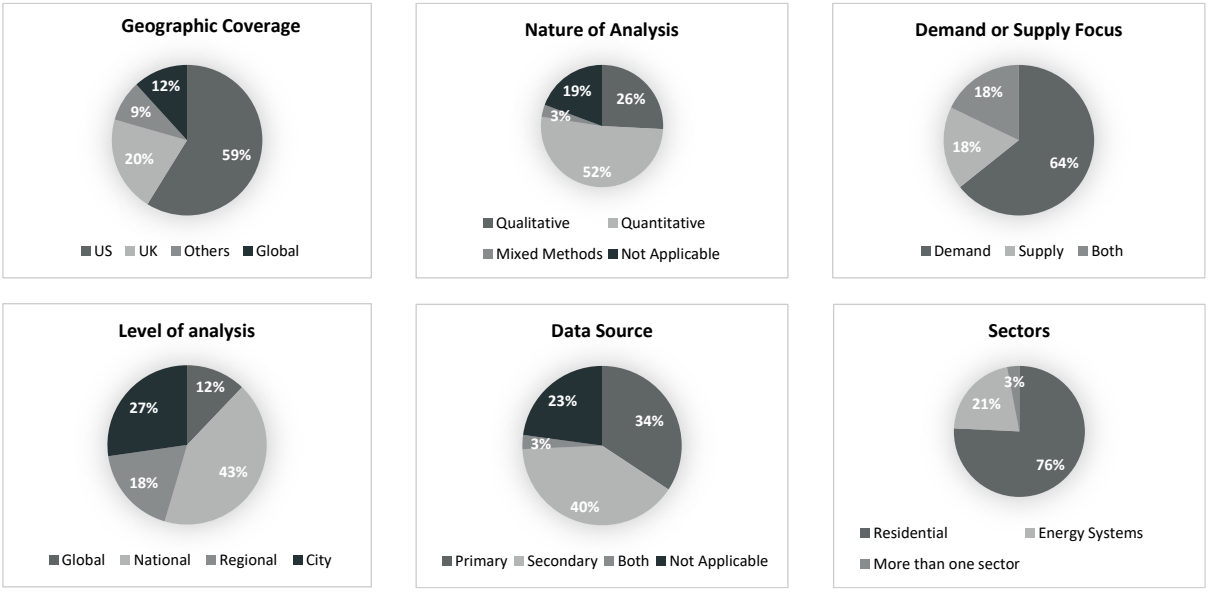

Figure 2: Observations from the scoping literature review of 36 publications discussing energy & racialisation

While there is broad consensus on the dearth of research surrounding the relationship between racialisation and energy demand, specifically in the UK, some of the reasons behind the persistence of this gap include — challenges around briding research and action across different

scales and actors (Bouzarovski & Simcock, 2017; Forster, Hodgson, & Bailey, 2019; Raslan & Ambrose, 2022), availability of data and its appropriate classification in a manner that is useful for analyses but also non-essentialising (D'Agostino, et al., 2011; Ahmadzadeh, 2021; Bouzarovski, et al., 2022), and a lack of sufficient diversity within the research community to allow for multiple perspectives (Blakelock, 2021; EPSRC, 2022; UKERC, 2022).

Apart from the built environment (Huebner, et al., 2022; Rutten, 2020; Zewolde, et al., 2020) and transport (Schwanen, 2018; Gates, et al., 2019; Mattioli & Scheiner, 2022), which are two of the most significant drivers of energy demand (DESNZ, 2023), health (Hernandez, 2016; Camargo, 2020; Huebner, et al., 2022; Race Equality Foundation, n.d.) and food (Reames, 2016; Reames, Reiner, & Stacey, 2018; Martiskainen, et al., 2021) emerged as areas where there is an acknowledged link but where a need to build further evidence on the relationship between racialisation and energy demand remains. Specifically, within the built environment we require evidence around housing (Gulliver, 2017; D'Souza & Khan, 2021; Danewid, 2022; Raslan & Ambrose, 2022), especially in the private rented sector (Bouzarovski, et al., 2022), access to green spaces (The Ramblers, 2020), and heating and cooling needs (Kidwell & Ogunbode, 2022). Similarly, transport not only considers daily commute (Gates, et al., 2019), but also air travel (Mattioli & Scheiner, 2022) and mobile work (Hopkins & Davidson, 2022).

Processes to manage energy demand also hold the potential to be racialised. These include aspects around practices of using and managing energy, accessing energy advice services (Forster, Hodgson, & Bailey, 2019; Hodges, Schmidt, & Becker, 2022; Sovacool & Rio, 2022), acceptance and trust towards low-carbon technologies (Lennon, 2017; Owen, et al., 2023), as well as the overall governance of the energy system (Newell, 2021; Lennon, 2021; Bouzarovski, et al., 2022).

Conceptualising racial justice with respect to the energy system broadly fell under three categories—(1) an extension of the energy justice tenets (Jenkins, et al., 2016; Jenkins, et al., 2020), (2) drawing on the historical contexts of colonialism and racial capitalism in establishing these energy systems (Kothari, 2006; Lennon, 2021; Bhambra & Newell, 2022), and (3) framing around opportunities and ease of accessing services (Creutzfeldt & Gill, 2021; Bouzarovski, et al., 2022; Forster, Hodgson, & Bailey, 2019). Achieving the vision around any of these categories requires explicitly anti-racist approaches with respect to data collection (Ahmadzadeh, 2021), effective engagement among researchers and those who are being researched (Blakelock, 2021; Creutzfeldt & Gill, 2021), robust conceptualisation of social theories in the context of energy demand (Cannon & Chu, 2021; Bouzarovski, 2022; Sovacool, et al., 2023) and corresponding analysis, and principles of political education and engagement (Kapoor, Hood, & Youssef, 2022). During the course of this review, the following questions emerged, that became the foundation for further emirical data collection.

Table 1: Research questions

Status-quo	*Agency*: How do we understand the energy use experiences of people and communities who also experience racialisation? *Structure*: What role do organisations play in perpetuating or addressing injustices?
Aspiration	What can racial justice in energy demand look like? What is required to achieve it?
Contexts	What can we learn (or unlearn) from other contexts, movements and agendas?

3. METHODS

The outlined scoping literature review was complemeted with semi-structured interviews and

a project workshop to corroborate insights from the review, as well as build on them to respond to the research questions identified in Table 1. Empirical data was analysed thematically.

Data collection: Semi-structured interviews (n=27) were conducted among researchers and practitioners working on energy as well as social justice, across Europe. The respondents were identified through their association with CREDS, and authorship of publications identified in the literature review, followed by a snowball sampling approach. The semi-structured interviews alluded to the three research questions identified in Table 1. Preliminary results were presented in an online workshop in April 2023 to obtain feedback on the emerging findings, and an invitation to further the findings in the participants' respective work—this included 45 participants from research, academia and industry engaged in energy and/or social justice work in UK and Europe, some of whom had already participated in the semi-structured interviews.

Data analysis. Empirical data was analysed thematically, using nVIVO. A thematic analysis was identified as the analytical approach, since the objective of the research was to improve our understanding of the gaps in the research, and identify focus areas to further energy demand research that is anti-racist. The coding tree was developed inductively from the interview data, and further triangulated against the insigts from the scoping review. This led to the analytical structure demonstrated in Figure 3. The approach strengthened the insights from the review. For instance, mobile work as a dimension of enquiry did not emerge from the literature, but the racialisation of platform economy based mobile work in the UK was discovered during the interviews. The workshop was designed around the four enquiries that emerged from the thematic analysis (Figure 3), and form the basis for the findings presented in Section 4 that were finalised based on the insights and feedback from the workshop.

4. FINDINGS

The analytical enquiry begins with a recognition of the dearth of research linking energy demand and racialisation, in the UK. In responding to the research question on status-quo, the analysis first sought to understand the challenges around why this research gap persists. In the spirit of articulating an agenda on this, the remaining three analytical enquiries adopt a more action-oriented approach—beginning with the energy services where evidence needs to be built and strengthened, understanding the processes within the energy system that further racialisation, thereby speaking to procedural justice, and finally, ways to practice and sustain anti-racist principles in energy research, especially as a research centre established to further energy demand research. This section is structured upon this logic, as shown in Figure 3.

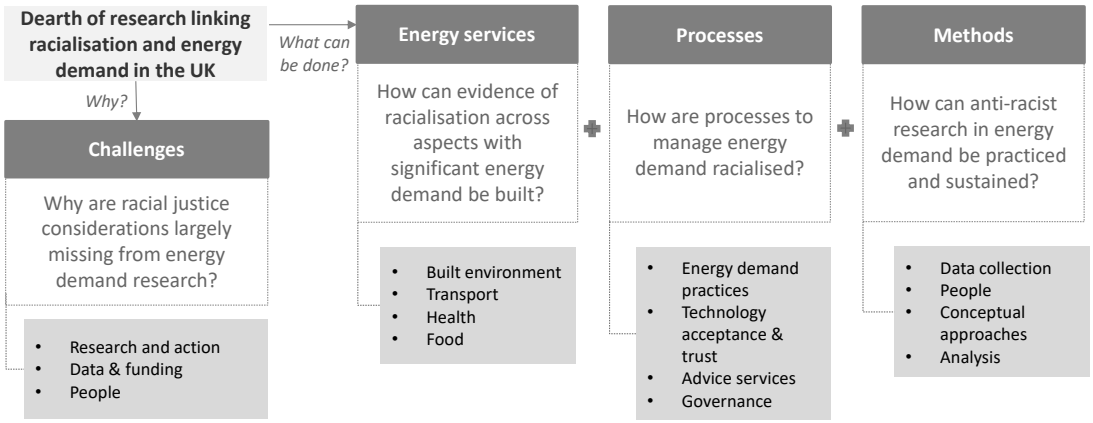

Figure 3: Thematic analysis structure

4.1. Challenges: Why are racial justice considerations largely missing from energy demand research?

Research and action: Linking a systemic issue like racial justice to specific empirical studies on energy use presents a challenge of bridging different scales—linking contemporary lived experiences with historic structural factors. Institutionalised racism within the energy system might appear unrelated to everyday practices of when to use the electric oven in the house. These associations might not be obvious to everyone. In circumstances where evidence already exists, it is important to translate the diagnoses into actionable interventions that can be embedded in practice. As observed by an interview respondent:*"In general, I think we need more intervention studies. Try to change something. What are the impacts of that? Because we often just correlate and don't try to make interventions.*" (AES4[1]). Another challenge has been the tendency to conflate class and race, with unhelpful hierarchies being created between representation versus redistribution that risks overlooking experiences (Fraser, 1998)—for example, whilst the UK's leadership in energy poverty research is widely recognised (Bednar & Reames, 2020), it does not translate to the demonstrably racialised nature of energy poverty.
Data and funding: Racism might appear evident in certain aspects of society, thereby making remedial responses such as affirmative action, plausible. However, with respect to energy use it is not obvious, unless the relationship between structural issues and everyday experiences is consciously investigated, such as proactively considering those who might be overlooked in the transition to net zero. As noted by Blakelock (2021), data pertaining to race and ethnicity characteristics (which is what most data on racialisation is usually reduced to) is not collected often, nor across all relevant datasets. This is corroborated by this quote: "*It would mean that we put equal emphasis on the voices of ethnic minorities, as of the typical white household. So that we collect as much data from them as from other parts of the population. And I think that's the part where we have spectacularly failed in the past*." (AES4). Some datasets are too small to conduct statistically significant analysis with adequate de-identification. Furthermore, many respondents opined that limited funding opportunities result in uncoordinated and restricted studies with limited explanatory capacity that might be unable to comprehensively address these research gaps —*"There are small amounts of money out there to do research on this issue. But little pots of money mean that researchers pick up small scale studies.*" (AES8).
People: The energy efficiency community and the energy poverty community might be working towards similar priorities, but those might be parallel efforts because there is insufficient overlap between them. Lack of diversity in these communities also contributes to the perception that transition to net zero energy system is a 'white, middle-class, predominantly male' concern—a constant refrain observed throughout many of the interviews. Labelling those outside this demographic group as 'hard-to-reach' or 'difficult-to-engage' puts the onus of action on already marginalised people rather than the system. The private rented sector, for instance performs very poorly on energy efficiency and contains some of the worst building stock across the UK. This link between energy efficiency, housing and racial justice remains largely unexplored. Some of the reasons for this research gap include (1) the absence of a clear contact person (like a housing or a tenants' association representative), (2) the research design is not considerate to the needs of people and how they could benefit from the research and hence do not have the incentive to participate, and (3) many immigrant tenants are vulnerable to the UK Home Office's hostile environment policy that makes them ineligible for most forms

[1] These are respondent signifiers, AE: Academic (Energy), AES: Academic (Energy & Social Justice), PE: Practitioner (Energy), PS: Practitioner (Social Justice), PES: Practitioner (Energy & Social Justice). The numbers merely signify the sequence in which they were interviewed.

of state welfare support, and might be reluctant to candidly share negative experiences.

4.2. Energy services: How can evidence of racialisation across energy services be built?

Built Environment: Whilst respondents recognised housing as a significant component to investigate, they also reflected that it is important to expand the scope to look at the broader built environment, not just the buildings that people inhabit (which significantly determines their energy use and access to technologies such as installing solar PV or heat pumps or smart meters that can be challenging in multi-storeyed housing projects, where certain racialised people are overrepresented), to have a more comprehensive appreciation of the spaces that people use. The location and quality of housing is determined by several socio-economic factors, which may in turn determine the type of contract that those who are tenants might hold with their energy supplier. Poor housing security and poor-quality building stock makes installing energy demand reduction measures (like insulation) less appealing, leading to higher energy use and costs. This is especially a challenge in the private rented sector—*"If you're in the private rented sector, it's gonna be really hard to get panels on your roof or any of these things that you need to be able to shift your demand and still have access to the energy services that that you need, especially because your tenure is short or uncertain.*" (PES2) Many local authorities, who used to have a more grounded perspective of the buildings in the neighbourhood that needed insulation and the corresponding ability of residents to fund these interventions through their local area action plans, no longer have those powers. Three respondents also brought up the increasing vulnerability to heatwaves being experienced across UK cities, their racialised nature, and its potential to alter the seasonal energy demand profile.
Transport: The interview responses explored the relationship between transport, energy and racialisation beyond daily commute, and reflected on nuances pertaining to air travel, mobile work, and accessibility of low carbon modes such as active travel. The ability to choose transport modes, and exposure to longer commute time is racialised (thereby increasing the risk of exposure to extreme temperatures and air pollution). Low-emission and active travel are not equally accessible to all members of the population. Living close to public transport increases property prices, crowding out those less able to pay, who are ironically in greater need of public transport. Air travel also varies by different social groups—*"Even families on really low incomes will set aside money to do that international flight every year to go back and see family. That is very different in comparison to a flight to a European weekend getaway*." (AE3). Another dimension that emerged from the interviews, and was not explicit in the literature is mobile work, those who provide mobility services such as van and food delivery drivers especially in the context of digitalised platform economies—"*Thinking about mobile work is a clear entryway into thinking about racialised mobility*." (AES5).
Health: Respondents provided an expansive framing to understand the significance and relationship between health, racialisation and energy demand. They recommended not to consider health as merely a dimension requiring energy but also to consider the health outcomes of poor energy use and how racialised experiences of energy use can contribute to poor health outcomes. Therefore, energy poverty should not be framed merely as an economic problem but one with significant health and well-being implications. Healthcare workers can also act as crucial intermediaries in research involving community engagement.
Food: Respondents recognise that people hold strong cultural ties with food that is important to understand with respect to diverse energy practices. Respondents observed that labour in the food retail sector also tends to be racialised, and its relationship with energy demand requires further attention. Food can also be a way of building trust when engaging with communities.

4.3. Processes: How are processes to manage energy demand racialised?

Energy demand practices: People have complex and diverse energy practices, that may not always lend themselves to obvious energy conservation practices or flexible time of use—some tactics to manage energy demand. Respondents corroborated the observation by Hodges, Schmidt, & Becker (2022), that energy users from multi-generational households (largely represented by people from an Asian background (ONS, 2023)) had energy demand profiles that could not always be as flexible—*"It's really about that agency and scope for people to do things differently. I've seen this in behavioural change research, it is assumed that people are constantly picking from a menu. For a lot of people, for a whole set of reasons, that menu is pretty constrained.*" (AES11). This also complicates assumptions and definitions surrounding average household energy use. Simultaneously, energy conservation practices of racialised people as they navigate the energy system, must be recognised, and emulated where appropriate. These could include practices such as switching off heating in rooms that are not occupied. However, we need to be cautious in ensuring that coping mechanisms to overcome hardship are not idealised, because—"*Many a times, trauma can resemble culture."* (PS1).

Technology acceptance and trust: While research recognises the role of public acceptance of technologies to decarbonise, there is not enough work on who constitutes that public. However, there is recognition that different groups engage differently with technologies depending on how easy they are to use, as well as how intrusive they might appear (for example, the technical possibility of smart meters to convert to prepayment meters). Women household members make majority of the household choices about energy use, but are not always in charge of monitoring energy consumption or paying the bills, especially in the context of increased digitalisation, automation and penetration of smart home technologies. The types of decisions being made in these contexts are different (day-to-day versus one-off decisions) and need to be distinguished from each other, as do the intersections between the different interdependent and relational identities and power that people hold in their lives—*"If we are designing and developing stuff and then putting it out in the world, but we have not talked to and included the people who will ultimately benefit or not from this, that is bound to fail. So the classic example is, putting heat systems in people's houses and the control system is built by an engineer or a technical-minded person. It might make sense to them in the lab to know how a thermostat works, but it makes absolutely no sense to the user, who doesn't really need to know that, but does need to know how to set it to be warmer during the weekend.*" (PES3)

Advice services: Many racialised people, especially recent immigrants and asylum seekers, are unaware of ways to access energy advice services that could support their decisions around energy suppliers and choice of competitive tariffs—for instance, deciding between fixed and standard variable tariffs, and which of those might be most suitable given their energy needs and the suppliers' responses to changes in wholesale prices. While energy suppliers are obliged to maintain a Priority Services Register (PSR) service of vulnerable customers (including those with extra communication needs or limited knowledge of English), this does not help those who are unaware of it. People who have experienced discrimination from authorities also feel uncomfortable accessing services, even those they are entitled to receive. Language barriers further complicate this—"*If English is not your first language, you cannot effectively obtain the information you want. You might actually not have had a meaningful conversation in a language that is easy for you to understand.*" (PES3). Owing to significant funding constraints, most of the advice support available is for emergency or crisis responses, rather than something more continuous.

Governance: The supplier-hub model positions the energy supplier as the primary determinant

of consumer needs, and their construction of the 'typical' energy user tends to overlook the diversity of energy users and their needs. Suppliers are obliged to publish quarterly implementation data on their energy efficiency programmes, which includes number of properties insulated, type of insulation, cost, etc. but is silent on the nature of beneficiary households and why they were targeted. This is an example of how policies and interventions could exacerbate racialisation or unequally distribute the costs and benefits of the transition—"*Rather than 'leaving no one behind', we should consider 'who should be taken along first'.*" (AES8). Local authorities and community action groups are often the first point of contact for communities. Their responsibilities and power to influence decisions need to be understood.

4.4. Methods: How can anti-racist research in energy demand be practised and sustained?

Data collection: Data collection and processing is political, not value neutral. While it is foundational to building evidence, it has its limits. Respondents acknowledged that it is important to be conscious about who is collecting the data, for what purposes, and whose needs are expected to be met by the research. For example, more systematic, better coordinated research would help to avoid participant research fatigue, and more longitudinal studies would support a more historically-sensitive understanding of the issues, and track their nuances over time. Oversampling the relevant group ensures that the data is representative and can be meaningfully analysed, whilst still protecting anonymity. Moving beyond essentialising categorisations like 'ethnic minority' is important to build understanding on the continuous and dynamic process of racialisation– the nuance of this data is still very limited. Properly informed research should ask specific questions, understanding what issues affect which people, so as to recognise the participants' experiences and not essentialise them within homogenising categories. Harmonising this data between the devolved nations would also help (as 'ethnic minority' means different things across the different nations of the UK). Case studies should exemplify a range of experiences rather than selecting reified cases because they might be convenient. It is well acknowledged in energy research that consumers' levels of agency to make 'rational' choices vary. For instance, where one lives, in what kind of house, significantly influences heating and transport 'choices'. Research about energy user experiences (especially around energy source), type of energy supplier (decentralised/ traditional market-oriented), and type of energy user are relevant in this context. Understanding users' experiences are crucial to the design of interventions and to inform policy. Linking this experiential data with an understanding of how institutional mechanisms perpetuate exclusion ensures that racialised people are not blamed for practices that actually emanate from such institutions. In some cases, the work may be extremely sensitive, such as groups exposed to higher criminalisation. Where necessary, engaging through trusted intermediaries, such as NHS case workers or community leaders, or shop keepers, is a useful way of reaching them. When doing this work, it is legitimate to consider paying people to compensate them for their time and contribution, and it is very important to consider issues of safeguarding, for researchers and their participants.

People: Researchers should acknowledge their positionality when considering an appropriate research design. In some circumstances, the researchers relative positions of power should be responsibly applied to highlight and further particular agendas—making one's normative starting point and position explicit, while acknowledging other approaches, and dimensions (of vulnerability, for example), can be a useful starting point. Consideration needs to be given to the framing of participation and its methods – are citizens' assemblies and participatory budgeting sufficiently representative? In order to be trusted in communities, researchers need

to respectfully use community practices and could consider taking bottom-up approaches that work with communities to identify the subject of the research so that it is beneficial to them.

Conceptual approaches: Social theories rooted in a recognition of intersectionality help make sense of the diversity of people's experiences of energy use, structural privileges and its consequences on their daily lives. This is an opportunity further embed social theories within energy research. This helps identify which challenges are systemic or specific and, consequently, where best to direct interventions. For example, if income is the predominant challenge, responses could include subsidies and benefit schemes, though mistrust in formal institutions or being ineligible for state support might mean such 'solutions' need to be delivered differently, and traditional 'units' of analysis such as households and 'families' rethought (it is well-known that female-headed, single parent households are one of the most vulnerable to energy poverty, for example).

Analysis: Like data collection, analysis is also not value neutral. Respondents recognised that the causal explanatory power of most quantitative studies remains limited, and suggested intervention-oriented approaches such as realist evaluations or social-impact assessments to provide useful contributions to this limitation. Qualitative approaches such as discourse analysis were found to be informative in explaining the disjuncture between evidence and ideology. Respondents also recognised that it is the fundamental nature of some evidence to be political. For example, good air quality and access to green space are correlated with good health and there is ample evidence that access to these is racialised. The implication is that by depriving some parts of the community of green spaces, their health and well-being may be compromised.

5. DISCUSSION AND CONCLUSIONS

This research was envisaged to begin understanding ways to further anti-racist energy demand research. While there are several limitations in conducting this work—ranging from structural (such as participating in the energy system, being dependent on controversial energy infrastructures, and the positionality of researchers) to semantic (negotiating the use of terms like BAME or ethnic minority that are recognised as problematic, but data continues to be collected along these categories)—the paper proposes two approaches as next steps. The first is applying the sociological principle of transversality to nuance the relationship between identity and power dynamics, in conducting research of this kind, and the second is the application of a heuristic framework to build upon anti-racist ambition in energy demand research with the caveat of not being teleological and perpetuating epistemic injustices.

It is important to acknowledge and accept that research of this nature is political, and can be uncomfortable. It is important to hold safe spaces, but also engage with the discomfort as part of dismantling systems of injustice, and offering "care across differences" (Eaves, et al., 2023). This should however not compel us to force-fit a singular definition of what anti-racism 'should be'. Racialisation is a dynamic and continuous process, therefore, the objective of this effort is to create analytical space for a pluralistic interpretation, that exists amidst the contradictions and multitudes of the social relations and energy system (Bouzarovski, 2022; Sovacool, et al., 2023). Racialisation persists because of its ability to constantly redefine 'the other' (Meghji, 2020; Meer, 2022). Therefore, as actors engaging with work on racial justice, it is important to resist reductive and essentialising labels such as 'BAME' and 'ethnic minorities' and adopt more flexible ways to understand and articulate the processes of racialisation, and how it impacts identity. A transversal approach could provide a useful starting point to respond to this (Yuval-Davis, 2017; Cannon & Chu, 2021). How do we minimise the risk of homogenising by

being sensitive to inter- and intra-group dynamics around power and privilege, and not standardise all characteristics and experiences? This also helps us understand the ways different social divisions are constructed by, and intermeshed with each other, in specific historical conditions. Acknowledging interdependence between various actors, the intersectional nature of their identities, and the relationality of their power and agency vis-à-vis other actors, helps us to challenge unhelpful binaries like 'engaged versus hard to reach' or 'active versus passive energy users', or hold people's identities and powers as a static rather than dynamic relationship (Damgaard, McCauley & Reid, 2022). Future efforts to build on more explicitly anti-racist energy demand research, should consider transversal politics as a conceptual framework (Figure 4). with potential to interpret the differential power positions, differences that engender rather than replace notions of equality, and recognise the layered relationship between identifying with certain social groups, and diversity in their positioning and socio-political values (Yuval-Davis, 1999).

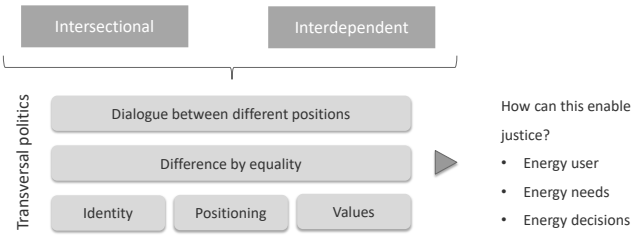

Figure 4: Power and Identity: The role of transversal politics in anti-racist research

To complement this conceptualisation, with an action-oriented approach, and inspired by works from gender and development, a racial justice 'continuum' (Figure 5) is proposed to articulate and set anti-racist ambition in conducting energy demand research (Kabeer, 1994; UNFPA, 2021). While it is acknowledged that research alone cannot deliver racial justice, a commitment towards ensuring that energy demand research qualifies for the criteria outlined under the 'responsive' category, is a reasonable ambition to begin with. While applying this continuum, it is important to be conscious that the framing is not a teleological vision of achieving racial justice (Seamster & Ray, 2018), and must be interpreted appropriately, as a suggestive scaffolding to think more proactively about anti-racist energy demand research.

Racist	Neutral	Sensitive	Responsive	Racially just
Creates or perpetuates assumptions that discriminate, invisibilise or exclude racialised people's experiences	Ignores racialised differences, needs and power dynamics, and does not allow for building solidarity with other dimensions. "I don't think race is the problem in this case."	Considers race as one among many other factors. Example, adding an indicator on ethnicity, or beginning to collect disaggregated data on ethnicity	Specific action, research or intervention to tackle challenges pertaining to racialisation in a particular context	Address racial injustice and its root causes at a structural level, across all scales of society, institutions and governance

Figure 5: The racial justice continuum (Narayan, 2023)

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