PRIME

POLICY BRIEFING

ENERGY DIGITALISATION: TOWARDS MORE EQUITABLE OUTCOMES FOR MINORITY ETHNIC COMMUNITIES

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Key findings and policy implications

1. Digitalisation is central to affordable, secure and decarbonised supply of energy by optimising supply and demand in near real time. While affordability of energy bills is legislated in the new Energy Act 2023, **minority ethnic communities are more likely to be in fuel poverty** than the rest of the population. This raises the question of whether and to what degree they stand to benefit from increasing digitalisation, unless targeted measures are developed to counter current inequalities.
2. To what extent and in what ways **minority ethnic communities take part in current digital services is not known, creating the 'blind spot'** of the sector. Such data is not collected by suppliers while network operators have better visibility of spatial clustering of minority ethnic communities within their regions. More attention needs to be paid to developing systems which capture ethnically disaggregated data to ensure just energy transitions.
3. Minority ethnic communities face multiple barriers in accessing digital energy services, including language, age, economic factors and lack of trust that limit engagement with digital platforms which need to be taken account of in developing equitable digital systems, processes and products.
4. Selective offer of tariffs in different postcodes has implications on the **availability of choices to consumers and signal risks for customer discrimination**. This is a concern particularly for minority ethnic communities who are more likely to live in deprived areas. The assessment of consumer vulnerability programmes needs to recognise to what degree customers living in deprived areas are included.
5. **Existing efforts remain insufficient and fragmented**. Partnerships between network operators, suppliers, and community organisations are essential to ensuring minority ethnic communities receive the necessary support and are not left behind in the transition to net zero.

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INTRODUCTION

This policy briefing is informed by extensive research – including interviews and interviews with policy-makers and practitioners – conducted by the UKRI-funded Protecting Minority Ethnic Communities Online (PRIME) project: https://www.primecommunities.online/. PRIME is a collaboration between five universities led by Heriot-Watt University. The project has also engaged extensively with individuals with lived experience who acted in an advisory capacity, community organisations, policy actors and other stakeholders throughout the research process. Launched in April 2022, PRIME has identified the distinctive online harms minority ethnic communities face amidst the rapid digitalisation of primary healthcare, social housing and energy, and developed innovative and groundbreaking social and technical tools to empower policymakers, practitioners and regulators to create safer, more equitable online spaces. The focus of this briefing is on energy.

In the remainder of this briefing, we explore the current challenges in accessing digital energy services by examining several key areas. Firstly, we outline how minority ethnic communities are more likely to be in fuel poverty than the rest of the population and whether digitalisation can deliver its promise of affordability for them. We then discuss how lack of data on the extent and scope of minority ethnic communities taking part in current digital services is not known, creating the 'blind spot' for the energy sector. This is followed by a discussion of the multifaceted barriers, including language, age, and economic factors, many individuals from minority ethnic communities face in accessing digital energy services. The fourth section delves into the selective offer of tariffs in different postcodes, examining whether this practice could be viewed as discriminatory, especially when it disproportionately impacts minority ethnic communities. Lastly, we discuss how fragmented approaches to protecting consumers between suppliers and network operators can be improved by adopting a whole system approach.

1 HIGHER LIKELIHOOD TO BE IN FUEL POVERTY

Energy prices have been on the rise, especially since the Russian invasion of Ukraine (Bolton & Stewart, 2024). Given the scale of investment needed in energy systems, along with increasing prices, perhaps not surprisingly, the affordability of energy bills is legislated in the new Energy Act 2023. While the introduction of Energy Price Guarantee[1] and energy price caps limits per unit cost of energy, households who do not have home insulation, energy efficient appliances or have vulnerable characteristics (e.g. dependency on electricity for medical reasons), may not have access to the same level of protection as others. It is noted that minority ethnic households are more likely to be in fuel poverty than white households in England (DESNZ, 2024a). This is echoed by the Joseph Rowntree Foundation (2022) which observed that minority ethnic families are disproportionately affected by rising energy costs, with many living in energy-inefficient homes that lack proper insulation and heating systems. These structural disadvantages contribute to a cycle of energy insecurity, where vulnerable groups are unable to adequately meet their energy needs without facing financial hardship. Additionally, Carley and Konisky (2020) highlight that racialised communities are less likely to benefit from energy efficiency programs and renewable energy initiatives, resulting in lower levels of energy security and higher overall energy costs. Furthermore, the intersection of race and socio-economic status (e.g. income, employment, and housing conditions) compounds the challenges faced by racialised communities in accessing reliable energy services (Bouzarovski and Petrova, 2015).

In meeting the UK's ambition to fully decarbonise the electricity system by 2030 and reduce its emissions to net zero by 2050, the affordability of energy can only be attained via digitalisation. As supply needs to meet demand for electricity instantaneously, on a second-by-second basis, digitalisation is essential for optimising energy production and consumption as well as improving the stability and resilience of the power grid in a cost-effective way. The cost-effectiveness of digitalisation stems from the ability of the energy system to create tariffs and signals for households to shift their energy use decisions away from high demand periods. By shifting or reducing demand, the imbalances between supply and demand are managed flexibly with no need to install stand-by generation such as gas power plants. By offering this demand flexibility, households do not only avoid energy system costs associated with running these power plants but also stand to receive financial benefits. Indeed, the participants of such a large programme ran by the UK electricity system operator, the so-called demand flexibility service (National Grid, 2024), noted benefits ranging from rebates on energy bills, to avoiding black outs and reducing carbon emissions (Centre

1 https://www.gov.uk/government/news/government-announces-energy-price-guarantee-for-families-and-businesses-while-urgently-taking-action-to-reform-broken-energy-market

for Sustainable Energy, 2023). The combination of these financial and altruistic values is a testament to the multi-faceted values that underpin the public's interest and engagement with energy transition (Butler et al., 2013). While the development of such demand flexibility programmes, smart energy control and monitoring tools and methods are expected to foster innovation, (BEIS, 2021), and ideally market competition, in energy markets, how and to what degree minority ethnic households stand to benefit from increasing digitalisation is a big unknown as there are no robust datasets.

2 THE 'BLIND SPOT' OF ENERGY SECTOR

There are two key data-related issues concerning minority ethnic communities in the digitalisation of the energy sector: a lack of data on the potential discrimination they face and the absence of information on how these communities are adapting to digitalisation. While digitalisation is essential for the cost-effective and efficient functioning of the smart grid, not all customers have equal access to its benefits. While 63% of all meters in Great Britain are smart or advanced (DESNZ, 2024b), there are no datasets on its coverage by ethnicity. Individuals facing digital poverty, particularly many from minority ethnic communities, are often excluded from technological advancements (Sovacool & Dworkin, 2014). For instance, the shift towards mobile app-based platforms may disproportionately disadvantage those who lack access to advanced devices or the necessary skills to navigate these technologies (Toyama, 2015).

Minority ethnic communities are largely overlooked in the digitalisation of energy systems. Energy suppliers typically do not collect or analyse data based on ethnicity, creating a 'blind spot' for understanding how these communities engage with digital services. The network operators, on the other hand, have a better visibility of geographical concentration of minority ethnic communities within their regions but the spatial resolution of this data is very coarse. As a result, ethnicity data 'falls through the cracks'. This is very concerning as government statistics (Department for Business, Energy and Industrial Strategy, 2020, 2022) and research have consistently indicated that these communities face higher rates of fuel poverty and energy insecurity compared to their white counterparts (Bouzarovski et al., 2022). Furthermore, existing research highlights that minority ethnic communities are more likely to live in energy-inefficient homes and face barriers to accessing renewable energy technologies (Department for Business, Energy & Industrial Strategy, 2022). As analysis of the 2021 Census data shows a higher proportion of ethnic groups categorised as 'Asian, Asian British or Asian Welsh' are more likely to live in

multigenerational households (ONS, 2023), they may face additional challenges in accessing and implementing energy saving measures.

Summing up, while the lack of ethnicity data hampers efforts to ensure equitable access to digital services and energy efficiency programs, existing data indicates significant inequalities relating to the affordability of energy and access to energy saving measures. With increasing digitalisation, there is high risk that current inequalities will only be exacerbated in the future, unless greater effort is invested in countering these inequalities to ensure just energy transition. The Minoritised Ethnic People's Code of Practice for Equitable Digital Services contains principles and recommendations to guide the development of digital services. Underpinned by seven principles – fairness, compassion, user-centred, accessible, transparent, private and secure, and trustworthy – it offers a guide for decision-making about the purpose, design, delivery and use of personal data, to help safeguard against the inequities experienced by individuals in this section of the population in access, experiences and outcomes of these services.

3 BARRIERS TO ACCESSING DIGITAL ENERGY SERVICES

The uptake of energy smartphone apps remains strikingly low compared to other sectors (Ofcom, 2023). The top smartphone app, Whatsapp, has a reach of nearly 40 million adults, followed by Facebook with over 36 million users. In contrast, the most widely used energy app, Octopus Energy, has a reach of just over 1 million users, followed by Ovo Energy at 0.7 million. Several other energy apps have even lower usage, ranging from 0.3 million to under 0.1 million. This stark difference suggests a significant gap between the potential of digital energy tools and their actual adoption by consumers.

Our primary research reveals that many minority ethnic households are reluctant to fully embrace energy apps for managing their energy use. The most commonly used energy-related app is a top-up app, primarily used to control spending for those on prepayment meters. However, even among users aware of the benefits of energy apps, many choose to stick to traditional methods, such as paying bills at the post office, due to concerns over data privacy and fears of sharing personal information online.

Some individuals had smart meters installed while others lived in homes which already had a smart meter installed. Yet others had requested smart meters but were told that they were not offered in their area. Individuals had mixed views about their use. While some found them helpful in monitoring energy consumption, others found it stressful to use them as they could see rising levels of consumption, for instance, while they were ironing clothes. Many felt that their ability to cut down on energy consumption was futile due to the essential nature of activities which required energy, such as cooking. Levels of awareness of energy-saving schemes was also low, further hindering their ability to cut down on energy consumption.

The search for cheaper tariffs was challenging for some individuals in minority ethnic communities due to difficulties in understanding how the tariffs operate and lack of access to advice. Others lived in the private rented and social rented sector, where they felt it was not possible to change their suppliers. It is worth noting the higher levels of representation of minority ethnic communities in the private rented sector compared to White British/Scottish individuals (Department for Levelling Up Housing & Communities, 2024; Scottish Government, 2021).

The lack of user-friendly, trusted digital offerings in the energy sector also contributes to this hesitancy. Many minority ethnic consumers prefer the certainty and familiarity of traditional payment methods, and without clearer assurances on data security, the wider adoption of energy apps will remain limited. Thus, despite the growing digital infrastructure, the energy sector faces challenges in convincing minority ethnic consumers to fully engage with smartphone apps. While issues related to trust may also be experienced more

widely, individuals from minority ethnic communities face other challenges in engaging with digital services.

The language barrier in energy services disproportionately affect minority ethnic communities. Energy companies typically prioritise English in their digital offerings, which is seen as a cost-effective strategy given the predominance of English speakers. Our primary research revealed that lack of multilingual support limits access for non-English speakers, creating significant challenges in understanding and navigating energy services. Older adults are often less proficient in English and may lack the digital literacy required to utilise online platforms effectively, which, as suggested by Poole, Ramasawmy, and Banerjee (2021), could lead to further exclusion from energy-saving programs. While individuals across all ethnic groups experience digital literacy challenges, these challenges are exacerbated for minority ethnic individuals due to disparities in educational and employment opportunities, which are positively correlated with digital skills acquisition (Hutchings & Sheppard 2021). As a result, these individuals face increased difficulties in accessing vital energy information, ultimately leading to higher energy costs and diminished opportunities for engagement with digital energy management tools.

Furthermore, energy providers tend to favour customers who are easier and less costly to serve, typically those who utilise digital payment methods and smart meters. This preference leaves financially constrained households, particularly within minority ethnic communities, at a disadvantage. Many low-income individuals rely on prepayment meters or traditional billing methods, which are viewed as more resource-intensive by service providers. This dynamic perpetuates a cycle of exclusion, as financial poverty limits access to essential digital tools like smartphones and the internet (Hernandez and Roberts 2018). Furthermore, digital poverty exacerbates energy insecurity; households with limited technological access miss out on energy-saving opportunities and critical updates, widening the gap between economically vulnerable groups and those who can easily engage with digital services (Ford et al., 2017).

4 SELECTIVE OFFER OF TARIFFS IN DIFFERENT POSTCODES AND DISCRIMINATION

To increase their market share, suppliers utilise postcode-based data from sources like Experian to assess the economic profiles of consumers in different areas. By utilising postcode data and credit ratings linked to specific areas, suppliers can gain insights into the socio-economic characteristics of different regions. This practice can lead to selective offering of tariffs based on postcode, especially in markets such as energy and insurance. While this helps companies tailor their services, it also limits consumer choice and can result in postcode-based tariff discrimination.

The cost of energy distribution can vary significantly by region; for instance, urban areas tend to have lower distribution costs due to higher population density, while rural areas face higher costs owing to longer distances (Ofgem 2015). Additionally, local demand and supply dynamics may play a much more crucial role in the future; regions with higher energy consumption or limited local supply may experience higher energy prices due to differences in network costs. Furthermore, infrastructure costs differ across areas, with older systems or those requiring significant upgrades incurring greater network reinforcement expenses. These factors contribute to the phenomenon known as the "postcode lottery," where energy prices can vary widely based on geographical location (Gallizzi, 2024). While a combination of network infrastructure and geographical characteristics lead to this price difference, it can create a perception of unfairness among consumers who are burdened with higher costs due to their location (Ofgem, 2016). Consequently, it may be that lower-income households in certain areas, including minority ethnic communities, may be impacted disproportionately.

As energy price cap is based on unit price of energy, it does not cater for differences in the efficiency of building fabric, the appliances in the home or individual vulnerabilities (e.g. dependency on electricity to power medical equipment). As Pakistani and Bangladeshi households, followed by individuals categorised 'as Black Other', are more likely to live in overall most deprived 10% of neighbourhoods[1], energy vulnerability programmes may directly focus on addressing these areas.

The newly created, independent, National Energy System Operator (NESO) may also play an active role in addressing structural inequalities inherent in deprived areas to ensure more equitable outcomes for minority ethnic communities. While the spatial resolution of Strategic Spatial Energy Plans are yet to be announced, rather than piecemeal approaches on home insulation or financial help, a whole systems approach to decarbonise buildings and transport systems can help with eliminating these entrenched inequalities.

1 https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/demographics/people-living-in-deprived-neighbourhoods/latest/#full-page-history

5 FRAGMENTED AND INSUFFICIENT SUPPORT MECHANISMS

Ofgem, as the energy regulator, is responsible for the protection of energy consumers, especially vulnerable people, by ensuring they are treated fairly and benefit from a cleaner, greener environment. These protections are enforced on suppliers and the regulated distribution network operators (DNOs). Ofgem's Priority Services Register (PSR) recognises not being able to read or speak English well as an eligibility criterion. It is recognised that minority ethnic communities may have language barriers and limited (digital) literacy. Yet, the **practices of suppliers and the regulated distributed network operators (DNOs) vary** where some companies do not openly list this criterion. While DNOs have a better understanding of vulnerability through the PSR than suppliers, they may not know people who are experiencing multiple or overlapping vulnerabilities due to data collection issues. As PSR can only be applied during outages, it needs to be further nuanced to cater to such vulnerabilities, including those experienced by some individuals in minority ethnic communities, particularly those relating to low income and greater likelihood of spatial concentration in areas of deprivation.

As minority ethnic households are more likely to live in deprived areas, it is highly likely that their homes are not energy efficient. Both suppliers and DNOs are obliged to provide home decarbonisation support. Suppliers are obliged to deliver an overall target of energy efficiency measures, based on their market share, to domestic premises under the Energy Company Obligation (ECO) order[1]. ECO aims to tackle fuel poverty and help reduce carbon emissions. As DNOs do not have direct links with the customers, they collaborate with community or third sector organisations in delivering their Customer Vulnerability commitments[2] which include fuel poverty and home decarbonisation support.

In order to identify eligible consumers and meet their annual ECO targets, it was reported that suppliers, at some point, offered £1,000 for referrals. Currently, both suppliers and DNOs may be approaching the same household which is detected only when the household's unique meter point number is provided to Ofgem. Suppliers and DNOs need to work together to jointly identify customers, be a high energy consumer, eligible for ECO or have limited English proficiency. The current variation in practices is not compatible with the goal of a 'fair transition'. There are no standards or best practice guidelines in the sector to ensure that minority ethnic communities are not left behind in energy transition. It is noted that the proliferation of future services and adoption of low carbon technologies is likely to widen these current inequalities.

1 https://www.ofgem.gov.uk/sites/default/files/2022-10/ECO4_SupplierAdmin_GuidanceV1.0.pdf

2 The report for 2022-23 assessment is available here: https://www.ofgem.gov.uk/sites/default/files/2023-09/2022-23%20SECV%20Panel%20Report%20Update.pdf

CONCLUSIONS

In summary, our findings highlight significant barriers to accessing digital energy services among minority ethnic communities. These challenges are related to limited access to digital resources, insufficient language support, and concerns around data collection and usage. For users, such obstacles often lead to distrust in engagement and access to digital energy services. Our findings underscore the urgent need for a more equitable digital energy framework which is committed to addressing these barriers.

METHODOLOGICAL NOTE

This research draws on multiple primary data sources: 100 narrative interviews with minority ethnic individuals, supplemented by 15 follow-up audio-visual interviews, 16 interviews with different actors along the energy supply chain, including government and policy makers; and a workshop involving energy sector actors. To ensure the participation of minority ethnic individuals with language barriers, language support was provided during the interviews. Discussions with different actors along the supply chain, and senior officials focused on challenges of ensuring equitable access for minority ethnic communities to access digital energy services. The workshop brought energy industry, academia and policy experts together by creating a collaborative platform for stakeholders to reflect and discuss our research findings and exchange ideas on what 'best practice' looks like for the energy sector with respect to achieving equitable outcomes and experiences.

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FOR MORE INFORMATION

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