Submission to Draft Energy Strategy and Just Transition Plan consultation, Scottish Government

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The vision outlined in the *Draft Energy Strategy and Just Transition Plan* (herein 'the Plan') represents an ambitious, multidimensional approach to ensure an affordable, secure, and renewable energy supply. This aspiration should be praised – with the Plan presenting key routes to ensuring future supply is ensured.

The Plan would benefit from a further entrenchment of strategies to mitigate the significant fluidity of patterns of future energy demand. External events and processes can prompt changes in energy demand and behaviour. The Covid-19 pandemic, for example, highlighted the flexibility and adaptability of the social practices that influence domestic energy use, given the increased time spent at home and adjustments made to comply with lockdown measures. In addition, the surging energy costs throughout 2021 and 2022 have worsened existing vulnerabilities and revealed new ones. These vulnerabilities have played out in how people use energy – with households reducing the use of indoor lighting and heating in response to rising bills.

Shifting and uncertain patterns of future demand are difficult to make policy for. In light of the Plan's vision of ensuring access to 'affordable clean energy' and 'delivering for communities', there are routes that allow for the mitigation of potential impacts and demands on the grid. This is with a particular reference to the social relations that can govern energy (both electricity and heat) at the community and neighbourhood levels.

Ensuring affordable and secure access to energy for households in Scotland requires a focus on the **social practices** that underpin individual and household demand – and how such subjective, social, and cultural elements interact with patterns of peak load. A focus on social practices necessitates an understanding of connections between the everyday aspects of people's lives and their daily routines, as well as the physical characteristics of their surroundings together with the technologies they may use. This can include mundane, routine, and habitual energy uses – such as switching on the kettle when you first get in from work. It can also include particular timings of energy demand – such as doing your laundry at certain times of the week.

These habits and routines require any policies focused on energy efficiency or household energy demand to focus on the 'rhythms' of such energy use – and understand how it interacts with patterns of peak demand. Energy usage is an integral component of consumers' various activities and, as a result, feeds into (and demonstrates) the daily, weekly, and seasonal rhythms of peoples' lives. These "energy rhythms" can be seen in how people act in different rooms of the home (such as the kitchen or bathroom). These are subject to change: a household's energy demand follows a rhythm that corresponds to their home-based practices during the day and week but undergoes change over the year in line with seasonal changes. To comprehend energy consumption over days, weeks, and seasons, it is necessary to recognize the rhythms of energy-using practices in everyday life – and how they repeat, change, and alter patterns of household energy demand.

Similarly to the cliché of everybody putting their kettles on at half-time of the football match, these rhythms of energy use, when scaled up to a collective level, can offer insights into the dynamics of demand in the aggregate, as well as the creation of rhythmic peaks of demand. Better understanding

these household rhythms at a collective, neighbourhood level allows for Scottish energy policy to both ensure an added functionality and resilience of the energy grid and start developing new social relationships with energy.

We applaud the Plan's goals of improving the EPC ratings of many Scottish homes (see p.144). This is a necessary step for addressing energy insecurity in many communities. However, it should be extended to include approaches that focus on the provision and development of new 'community energy social practice' roles. These roles, which local authorities or keystone institutions can be supported in fulfilling, could support neighbourhoods in co-devising locally-relevant, place-based approaches that foreground national energy transitions in local responses. These approaches can include the development of local-led understandings of what factors and contexts may drive sudden changes in peak demand, how new forms of resilience in sudden blackouts, or the sharing of energy in moments of intermittent supply.

The important links between social practices and energy demand can be seen in how the energy affordability tracker reports that 68% of respondents are reducing the use of electrical appliances because of financial concerns (see p.34 of the Plan). When people's circumstances change, so does their energy use. However, there needs to be a fuller discussion in policy and contributing research of what energy uses people prioritise and how these priorities might shift over the life course. How might these changes affect the Plan's implementation and success in five-, ten-, or fifteen years' time?

These individual social practices merge (in both complementary and contradictory ways) to create **neighbourhood-level energy systems**. These energy systems aren't necessarily connected through infrastructure (with each household having its individual connection) but are, instead, joined by a shared location. It is crucial to view energy consumption in homes from a collective perspective, rather than solely as individual usage. Household demand adds up to create neighbourhood-level demand.

In cities like Glasgow, retrofitting policies have focused on tenement blocks – due to their current inefficiencies. This represents a neighbourhood-level approach, in which retrofitting policy merges with a sense of place and community. It also raises further complexities. National and local policies towards tenements and their sustainability face a significant challenge in dealing with issues related to multiple ownership and tenancy arrangements.

With part of the Plan focusing on the need to ensure how local communities can benefit from electricity infrastructure, the adoption of this approach can facilitate future interventions that allow energy transition to include **"maximum economic benefits to Scotland's households and communities..."** Neighbourhood-level energy systems would feed into and broaden Energy Efficient Scotland's *Area Based Scheme*s, which currently target energy-poor areas. Future policy interventions can balance the previous focus on energy citizenship with an understanding of community-level demand to explore solutions for localized energy systems. This requires considering energy users as both individuals and part of a collective. Without this, digital and energy home transformation processes will be overlooked, limiting considerations of energy justice and digital equity to one-dimensional outcomes and policy factors.

This approach can reveal new dimensions of home energy management that reflect social and spatial aspects of energy use. By incorporating these dimensions, a bottom-up, collective energy management approach can be developed, adding value to existing energy infrastructure. This approach can be facilitated by increasing information and communication between stakeholders, providing predictable and understandable changes to energy systems, and involving users with a

long-term vision. Such cooperation and collective action in energy transitions will be key to achieving sustainable energy goals.

The adoption of neighbourhood-level approaches can provide the foci for future government-led interventions into household energy demand in particular locations and communities. The **creation of Heat and Energy Efficiency Scotland** represents an important opportunity for these emergent understandings of household energy use and neighbourhood-level demand to contribute to emergent policy change related to energy efficiency and retrofitting. Rather than focusing on the retrofitting of individual properties, house-by-house and street-by-street, this new public energy agency can adopt place-based visions that link together energy use, technology, home, and neighbourhood. These neighbourhood-level approaches to energy demand, sharing and management can also benefit the Plan's discussion of using batteries in strategic locations and communities (see p.130).

We agree with the Plan's aim of ensuring that "the net zero system is continuously innovative and competitive." However, a key way to do this is to foresee where the next innovations might come from – and how they might be harnessed to allow for **a more efficient, equitable, and nuanced energy system.** This involves policies that, like the Plan, move beyond boosting energy supply and towards analysing and addressing issues of energy demand. To do so, future iterations of the Plan need to ensure a fuller discussion of – and research into – the role of social practices and identities in creating patterns of energy demand.