

How can we create a smart net zero energy system which leaves no one behind?

Simon Roberts, November 2021



Simon Roberts, chief executive at CSE, spoke at the SSEN COP26 event on the importance of achieving a just transition to net zero and how that can be done. Here's his summary.

To hit net zero targets cost effectively our energy system needs to become smarter and more flexible to accommodate high volumes of renewable energy. But getting there requires significant and disruptive change.

This change, some of which is already underway, brings with it completely new ways to generate unfairness by radically altering the distribution of system costs and benefits between consumers. And it threatens to leave behind large numbers of people as new complexities or costs exclude them from being able to participate meaningfully in our future energy system.

‘Smart’ and ‘fair’ are key to the transition to net zero



It is clear from consumer research and the UK Climate Assembly that public consent for, and participation in, the transition to a smarter system is dependent on that transition being obviously ‘fair and inclusive’. ‘Smart’ without ‘fair’ is neither socially acceptable nor politically sustainable. But it is also true that ‘fair’ without ‘smart’ won’t deliver net zero.

While government, regulators and business leaders respond with commitments that ‘no one should be left behind’, we still are not seeing this principle put into practice as new markets are being developed and policies designed.

Our Smart & Fair research programme is exploring how these two vital outcomes can meaningfully co-exist in our future energy market. Our work shows that it’s not at all obvious that they can or will coexist. And that purposeful action is required to secure both outcomes for domestic consumers. Not (as we often found was assumed) just to ensure fairness in a market that is otherwise inevitably destined for smartness, but also to secure smartness itself.

We need to understand what changes in a smarter energy system

Smart energy innovation is changing the relationship between suppliers and consumers of energy and rewarding consumers for changing their patterns of energy use in ways previously unconnected to what they paid for energy. Our future system will include things like:

- **Lower rates (through time-of-use pricing) for adjusting electricity demand to avoid peaks or to match the output of renewable generation (and higher rates for failing to do so).**
- **Reducing electricity use through smart, demand reducing equipment or ‘behind the meter’ electricity generation and storage.**
- **Becoming involved in local or peer-to-peer energy supply.**
- **But not everyone will, and more importantly can, get involved immediately. These changes require consumers to have capabilities and attributes that have until now been largely irrelevant to participation in the energy market.**

Understanding these newly relevant capabilities and attributes has been central to Smart and Fair?. With expert stakeholders, we developed a Capability Lens; it details all the capabilities, characteristics and attributes of consumers needed to ‘keep up’ in a smarter system. These range from financial status and digital connectivity, to housing characteristics, energy demand patterns and potential for flexibility and demand reduction, and a host of personal and social factors, including attitudes to innovation and risk.

Alongside this, we are curating an extensive dataset – grandly named the Consumer Classification Model. This enables us to analyse how these capabilities and attributes distribute across the population – to reveal who’s likely to ‘keep up’ and who’s likely to be ‘left behind’.



We're now in the process of improving and validating this approach to underpin more extensive analysis of who is likely to participate in both individual smart energy offers and in the smarter market as a whole and how this is likely to change over time as offers and services become more ubiquitous. At the same time, the analysis enables us to understand what sorts of interventions might overcome barriers to participation – again at the level of individual offer and across the whole market of offers.

So what have we learned so far from Smart & Fair?

The need for purposeful action

It is clear that, in the context of a smart energy future, 'smartness' is not the natural partner of 'fairness'. Left to its own devices, the market for domestic smart energy offers will not become fair, putting at risk public support for change and the widespread participation the system needs. But if fairness is required in every offer from the start, there's a danger of stifling the very innovation needed to achieve a smarter system.

Our analysis points to four areas for early-stage action.

First, the conditions need to be created to allow any consumer to participate:

Public confidence must be developed – so no early horror stories of smart energy offers going wrong or ripping people off – along with an obviously widening participation. Consumers must be offered appropriate smart energy services on a timely basis and which suit their energy needs.

Strong protections are in place against 'mis-selling' (an unsuitable or poorly described deal) and 'missing out' (not being offered an available deal which suits).

Consumers have access to good advice and potentially a FlexAssure-style quality assurance scheme so they can make good choices and avoid 'mis-buying'.

These conditions are a pre-requisite for achieving the decent level of consumer participation needed to achieve 'smart' over time. They should be high priority for industry regulators and government. But they won't in themselves deliver 'fair' as many people will still be unable to participate.

Second, we must also avoid blunt interventions at this early stage to achieve fairness for example, rigidly insisting on fully inclusive design, or quotas for participation from different types of consumer. Such unsophisticated approaches now would risk stifling the very innovation which lays the groundwork for the smartness required.

That doesn't mean anything goes. To inform the design of future interventions to widen participation, we need transparent information from market practitioners and rigorous market monitoring to reveal what offers are emerging, what they require of consumers, the benefits and costs involved, and which consumers are likely to be able to participate now and over time. Our draft Guidelines for Smart Energy Practitioners provide a template for capturing the necessary information. We recommend that Ofgem and BEIS require that these guidelines are followed.



Third, we need to see funded pilot schemes that explore a range of approaches to securing fairer participation in smart energy offers and the transition to net zero. This will reduce the risk that the benefits of transition accrue to only a few and the costs of change fall on those least able to afford them. Public consent for change is only possible by achieving outcomes which are both smart and fair.

And fourth, energy retailers, networks, regulators and consumer advocates need to build a collective understanding of how definitions of consumer harm and vulnerability will change in the transition to a smarter energy system.

Barely a day goes by without someone senior in the energy sector saying that ‘no one should be left behind’ in the transition to net zero. Realising this vital goal will require purposeful action now from policy-makers, regulators and the energy industry itself. Our continuing programme of work in Smart and Fair is dedicated to providing the evidence base and analytical tools required to inform and shape that action.



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