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## **Smart Grids and the Flexibility of Everyday Life**

**Conference Theme:** Towards Low-Carbon Energy Systems

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As electricity production and consumption systems evolve to enable transitions to lower cost, lower carbon energy the 'smart grid' has emerged as an imaginary which promises to enable power systems to manage increased renewable power generation, the electrification of more and more energy services as well as the new geographies of electricity production. Uniquely the smart grid promises to bring consumers of electricity into the management of the grid by asking them to provide the flexibility and responsiveness that the industry is losing as supply becomes less predictable and less controllable. In the UK context, flexibility is sought in order to reduce the degree with which energy consumption is concentrated in the early evening so that network reinforcement can be deferred and so that risks to supply industry actors can be managed by asking customers to reduce consumption for defined periods of time on either a day-in-day-out basis or in exceptional circumstances.

In this paper we draw on 132 qualitative home tours in the UK as well as smart meter data taken from over 4,000 UK households to examine the social practices which shape the load curves used by industry actors to understand consumption and manage networks. Using qualitative and quantitative analysis practices we consider how, in what ways and for what purposes consumption of electricity may be or become flexible using inter-day, intra-day and locational flexibility and practice curtailment as ways to think about how households might participate in smart grids.