

DEMAND-SIDE MANAGEMENT

When it pays to be smart

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The ever-increasing interconnectivity between electronic devices promises to transform future electricity supply and demand through smart grids. Using smart meters and internet-connected home appliances, supply and demand could be matched in real time, helping overcome concerns associated with high penetrations of variable renewable electricity generation. Indeed, some regions are already promoting the use of services that can assume partial control of consumer appliances in order to regulate the power grid. While a plethora of potential service contracts and scenarios can be imagined to enable this smart future, little is understood about how consumers would respond to such demand-side management operations. Now, Laura-Lucia Richter and Michael Pollitt at the University of Cambridge present analysis of a consumer survey that sheds light on how households value smart services and what expectations they have.

The researchers use a discrete choice experiment from 1,892 electricity consumers in Great Britain in 2015 that explored six attributes of possible contracts: monitoring and control of energy usage; technical support; data privacy and security; likely savings in bills; and service fees. Though there is significant variation between the valuations consumers ascribe to the different levels of service provision presented, Richter and Pollitt find that consumers would expect compensation to partake in any smart service contract that requires the electricity provider to remotely monitor and control usage. Contracts that require consumers to share their electricity usage and personal data required the highest compensation, highlighting the importance of data privacy and security for consumer acquisition. Differences in valuations between consumer groups further reveal the potential for a range of tailored service contracts that target individual consumer traits.

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