

Sustainability First Annual Report : 2013 & 2014

Foreword from the Chairman

2013 and 2014 were a period of great activity for Sustainability First. Our three-year project ‘**GB Electricity Demand Project- *realising the resource***’ continued to be a major focus, with strong engagement in the research, analysis, review and publication of the last seven project papers (of a series of thirteen). The project and its findings have been widely acknowledged as making a major contribution to general understanding of the potential of the electricity demand-side in GB. Since the project began in 2011, we have been delighted to work closely with a wide range of project partners and organisations. The detailed analysis undertaken for the project and the debates we have led, together with the practical experience of demand-side response provided by working with a variety of project partners, including from the Low Carbon Network Fund projects, plus the work of the DECC / Ofgem Smart Grid Forum, have helped to transform current understanding of the GB electricity demand-side landscape. As chair of Sustainability First, I was therefore pleased to read a strong endorsement of our project in the report of the Science & Technology Select Committee of the House of Lords on The Resilience of the Electricity System, who noted : *‘the large body of work undertaken in the GB Electricity Demand project run by Sustainability First, which has made an important contribution to the understanding of the nature of demand and the potential for industrial and domestic DSR’*¹.

The work which Sustainability First has contributed to Northern Powergrid’s Customer-Led Network Revolution project has also complemented the GB Electricity Demand Project and demonstrates the many practical benefits which follow from cross-fertilisation of this kind.

I am also pleased that Sustainability First has been able to contribute to the development of future policy-thinking in the area of water regulation through the paper ‘Water Consumers – Today & Tomorrow’ and the discussion and debate we ran on the topic. The ideas in the paper about safeguarding the longer term public interest in the water sector are important – a theme to which Sustainability First plans to return in 2015.

Ted Cante (Chairman)
April 2015.

¹ 1st Report of Session 2014-15. HL Paper 121. para 160

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1. About Sustainability First

Sustainability First is a small environmental think-tank with a focus on practical policy development in the areas of sustainable energy, waste and water. In 2015 we will celebrate our fifteenth anniversary.

Our aim is to improve knowledge and understanding of complex multi-disciplinary issues in energy, water and waste. We develop implementable ideas which can make a difference for sustainability in these key policy areas – including the roles of economic and other regulators. We carry out research and analysis, publish papers and organise policy seminars. Our primary focus is on policy and solutions in the UK, but we draw on experience and initiatives both within and outside the UK.

It is a registered charity – www.sustainabilityfirst.org.uk.

Sustainability First’s trustees are: Ted Cantle (Chair), Phil Barton (Secretary), Trevor Pugh (Treasurer), John Hobson (until 2014), Derek Osborn, David Sigsworth, Sara Bell, Derek Lickorish and Richard Adams. Its projects are developed by the trustees and by a number of associates and consultants.

Sustainability First’s associates are: Gill Owen, Sharon Darcy, Rebekah Phillips, Clare Dudeney and Jon Bird. Judith Ward is Sustainability First’s part-time Director. Maria Pooley was employed by Sustainability First’s as our research officer from 2011-2013.

Since 2006, Sustainability First has undertaken a series of major multi-sponsor studies on GB household smart energy meters that develop and disseminate knowledge and insight in the fields of energy efficiency, smart metering, smart energy tariffs and demand response².

² Sustainability First published smart meter papers are available on the website – www.sustainabilityfirst.org.uk

2. Sustainability First - People

Ted Cantle CBE (Chair) was one of the founding-group of Sustainability First Trustees in 2000. A committed environmental champion, with a strong focus on tackling climate change, he was a member of the Board of the Environment Agency for England and Wales (from 2000 to 2008) and Deputy Chair (2005 to 2008). Ted led the Environment City bid for Leicester City Council in the late 1980s and the Nottingham Declaration on climate change in 2000, subsequently adopted by many other local authorities in the UK and elsewhere. Ted also founded and chairs the iCoCo foundation, an institute to promote inter-culturism and community cohesion. He chaired the Independent Review of the riots in northern towns in 2001, was responsible for the 'Cantle Report' and the founding of the community cohesion programme. He was formerly chief executive of Nottingham City Council and chair of the DTI Construction Task Force for local government. Ted was appointed CBE in 2004 and is a Deputy Lieutenant of Nottinghamshire. Ted has recently spear-headed the successful multi-million bid to the Heritage Lottery fund to transform Nottingham Castle into a world class attraction.

Phil Barton former chief executive of Keep Britain Tidy (until March 2015), the charity which campaigns for a cleaner, greener England and which runs a range of environmental programmes including EcoSchools, Green Flag Awards for greenspaces and Blue Flag beaches. Keep Britain Tidy merged with Waste Watch in 2011 and launched a new national local pride campaign: Love Where You Live. Phil formerly worked on regeneration skills for the NWDA, for Defra on rural voluntary sector policy and for Groundwork UK.

John Hobson retired as a Trustee in 2014. John previously worked an independent policy adviser on construction, education and sustainability. He was former construction director in the Department of Trade and Industry.

Derek Osborn CB is a senior environmentalist advising on long-term strategic issues for governments, international bodies, business and the voluntary sector. He is also president of the Stakeholder Forum for Our Common Future, and a member of other boards in the private and voluntary sectors. Derek held senior roles in the arena of environmental protection : he served as director general for environmental protection with the Department of the Environment (until 1996), chaired the board of the European Environment Agency (1995-1999), and was a board member of the Environment Agency for England and Wales (1996-98), having been involved in its early set-up. He was a member of the European Economic and Social Committee from 2006 to 2010 and was the first chair of its Sustainable Development Observatory. He currently lives in Wales and is Chairman of Cynnal Cymru - Sustain Wales.

Trevor Pugh is Strategic Director, Environment and Infrastructure directorate, Surrey County Council, and has held senior positions in a number of London boroughs. Trevor is an environmental scientist and has championed sustainability in construction and across the range of local authority services.

David Sigsworth is chairman of Sigma Capital Group plc (property and urban regeneration specialist), former chairman of Flexitricity and chairman of Sea Energy plc (thought leader in the offshore wind industry). He is a vice-president of the Association for Decentralised Energy, chair of the Scottish Environment Protection Agency and chair of the Scottish Fuel Poverty Forum, which advises the Scottish Government. A former board director of Scottish & Southern Energy, David is an honorary Professor at the University of Dundee, involved in MSc courses covering sustainable energy and environmental modelling.

Sara Bell is UK CEO at Tempus Energy, an energy retailer who have developed a technology platform that helps customers manage their power consumption flexibly into cheaper price periods. Previously, Sara was responsible for developing UK Power Networks' commercial strategy for future distribution network and operation, including delivering savings in traditional electricity network investment and improvements in performance through developing commercial alternatives such as demand side management.

Richard Adams OBE is a founder of several successful UK social enterprises that allow people to express ethical values through their work, spending or saving, mostly focused on fair trade, the problems of social exclusion, fuel poverty, international development and sustainability. Richard is the British founder of the UK fair trade organisations Tearcraft and Traidcraft and was convenor of the steering committee of what became the UK's Fairtrade Foundation. He has also founded a corporate social responsibility research group and the UK's first ethical supermarket chain. He has degrees in sociology, theology and business and has a number of honorary doctorates and visiting fellowships from British universities. He is currently President of the EU's Economic and Social committee's Permanent Study group on a European Energy Community.

Derek Lickorish MBE has had an extensive career in the energy business. Derek spent more than six years as chair of the government's Fuel Poverty Advisory Group (until 2015). He is honorary chair of the trustees of National Energy Action. He is a non-executive director of the Green Deal Finance Company Ltd and of Secure Meters SHPL Pte. He is a member of Ofgem's Sustainable Development Advisory Group and, RWE Npower's Customer Stakeholder Council. Derek was previously EDF Energy's Chief Operating Officer, (Customers Branch) for 5 years, and, before that the Customer Service and External Affairs Director at SWEB from 1996. He started his career as a trainee at Seeboard in 1970.

Sustainability First Director

Judith Ward has been part-time director of SF since 2012, after working for several years as an SF Associate. She is an energy policy professional with long-standing practical experience of both the utility and consumer worlds. Judith has published extensively on policies for GB household smart meters, smart tariffs and demand response with Sustainability First. Her long-term career was with National Grid (1990-2004), where her last role was a six-year period as Group Head of Public Affairs. In her early career, Judith worked in policy roles with the House of Commons

Environment Select Committee and the national Electricity Consumers' Council. Judith has a master's degree in Energy Resources Management. She was a part-time adviser to the UK Business Council for Sustainable Energy from 2005 to 2012 and was also a long-standing trustee of the Institute for European Environment Policy. Judith is an Honorary Fellow of the Energy Policy Group at the University of Exeter and a member of the DECC / Ofgem Smart Grid Forum.

Sustainability First Associates

Dr Gill Owen has worked with Sustainability First for over a decade as an Associate. She has undertaken extensive research and is widely published on fuel poverty, energy efficiency, smart meters, distributed energy and demand side response. Until March 2015, Gill was based in Melbourne for three years, where inter al she worked as a part-time senior researcher at Monash University. Gill provided advice to the Australian Energy Markets Commission and Australian Energy Regulator. Just recently returned to the UK, Gill continues as a member of the newly set-up Board of Energy Consumers Australia and also continues her involvement with the Consumer Challenge Panel on Network Policy. Gill is a part-time senior research associate at the Energy Institute at University College London. Before leaving for Australia in 2012, Gill was vice-chair of the government's Fuel Poverty Advisory Group, a non-executive director of the water regulator Ofwat and chair of the REAL consumer assurance scheme for micro-generation. Gill was a commissioner of the UK's Competition Commission for ten years until 2002 and has also been a non-executive board member of the energy regulator, Ofgem. She continued a close involvement with Ofgem as a member of Ofgem's Social Action Strategy Review Group and Consumer Challenge Group. She was a member of DECC's Smart Meters Consumer Advisory Group (and also a member of the predecessor body run by Ofgem).

Sharon Darcy is a champion of consumer concerns in energy and water. Sharon was elected to the Council of Which? in January 2015 and was formerly a long-standing board member of Consumer Futures and its predecessor bodies (Consumer Focus and energywatch). A qualified accountant, Sharon began her career working on value for money studies in the privatisation and regulation team at the National Audit Office. She subsequently worked for Consumers International, the world consumer groups federation, and for Which?. Sharon is presently a Trustee of the new workplace pension provider NEST where she chairs the Risk Committee. Since 2012, Sharon has been a lay member of the Standards Committee of the House of Commons. For the last five years, Sharon has been a member of Ofgem's panel to assess the network innovation competitions, plus a member of the Ofgem 'Consumer Challenge Group' (ensuring that the consumer interest is represented in setting prices for monopoly energy businesses). She was a member of Ofwat's Customer Advisory Panel for the 2014 water price review and the previous Ofwat Future Regulation Advisory Panel. Previous roles also include chair of a citizens advice bureau and member of the London and Southern Committee for the Consumer Council for Water.

Rebekah Phillips works with Sustainability First as an associate on a number of current projects and has a part-time role with Groundwork. She was Senior Policy

Adviser with Green Alliance for seven years, and led their Green Living Programme. She is a Visiting Research Fellow with the Policy Studies Institute. On a national level, Rebekah specialises in energy and behaviour change policy. She also manages local-level projects to encourage sustainable living. She has worked with a number of charities and research organisations. Previous posts held include Environment and Transport Analyst for BBC News. Rebekah studied anthropology at Durham University.

Clare Dudeney currently works with Sustainability First as an associate on a number of current projects. She is an energy policy consultant and fine artist. She was Director of Strategic Policy for Energy-UK the national energy organisation from 2012-2014. Prior to that she spent six years, with one of its predecessor bodies, the UK Business Council for Sustainable Energy, the body which brought together the major energy utility companies on climate and sustainability. At UKBCSE, Clare held posts as Head of Policy and thereafter Director. Clare has a first class degree in geography & environmental studies from the University of Lancaster and a masters degree in environmental science from Kings College, London.

Dr Jon Bird was, until March 2014, Head of Sustainability with Northern Powergrid (the electricity distribution company) and before that Head of Government Relations since 2000. Jon's role included regional and national stakeholder management on climate change and low carbon activities to assist the company in its understanding of the requirements of electricity generators and customers. He was a long-standing member of the CBI's energy policy committee and the CBI's northeast regional council. Earlier in his career, Jon spent 8 years with BNFL as Head of Government Relations, and almost twenty years with the civil service at a senior level, including in HM Treasury, DTI and the Department of Energy. He has a first class degree in mathematics from Cambridge University and a doctorate in general relativity. He is a Fellow of the Energy Institute.

Sustainability First Research Officer

Maria Pooley joined Sustainability First in July 2011, working full-time on the GB Electricity Demand project. Maria's earlier experience included working for an energy and environment consultancy, where she specialised in climate change policy for clients. She has a first degree in Natural Sciences from Cambridge and a masters in Environmental Technology, Energy Policy from Imperial College.

Sustainability First Book-keeping & Management Accounts Service – this service is provided to Sustainability First by Claire Froemberg and Jens Lindblad of the Institute for European Environmental Policy.

3. The 'GB Electricity Demand – *realising the resource*' project

This Sustainability First project on **GB Electricity Demand** was a three year project (April 2011 to October 2014), focusing on the potential resource which the electricity demand side could offer into the GB electricity markets, through both demand response and demand reduction. Key themes for the project included :

- Customer response and consumer issues
- Commercial and regulatory issues

- Public policy issues

The project was supported in its first year under the Northern Powergrid Low Carbon Network Fund project - and thereafter for a further two years to April 2014 via a multi-sponsor group.

Sponsors in 2013 & 2014 were: BEAMA; British Gas; Vodafone; Consumer Focus; EdF Energy; Elexon; Siemens E-Meter; E.ON UK; National Grid; Northern Powergrid; Ofgem; Scottish Power Energy Networks; and UK Power Networks.

Work was coordinated through a quarterly **Smart Demand Forum** whose participants also included four key consumer bodies: Energy Intensive Users Group, Which?, Consumer Focus / Citizens Advice and National Energy Action; plus DECC and the sponsor group members.

The project aimed to identify the potential resource which the electricity demand side could offer into the GB electricity market through demand response and through demand reduction. Its objectives were to:

- Evaluate and understand the potential GB electricity demand-side resource across all economic sectors (including the role of distributed and micro-generation).
- Develop a clearer understanding of the economic value of this resource to different market actors and to different customers over the next 10-15 years.
- Evaluate the key customer, commercial, regulatory and policy issues and interactions.

The Sustainability First team was : Judith Ward, Gill Owen, Sharon Darcy, Rebekah Phillips, Clare Dudeney & Maria Pooley. Additional expertise and inputs were provided by : Serena Hesmondhalgh of Brattle Group who developed a quantitative all-sector electricity end-use model ; Stephen Andrews of Lower Watts Consulting who supported the project on distributed generation and micro-generation ; and, Sarah Deasely and Claire Thornhill of Frontier Economics who worked with us on demand-side innovation.

A full list of the papers published by the project is at Appendix 1, with papers 6 to 13 being published in 2013 or 2014. The last three papers were:

Paper 11 : ‘How could electricity demand-side innovation serve customers in the longer term ?’ Frontier Economics led on a major section about innovation funding and the role of regulation in the customer-facing electricity demand-side. For Sustainability First led on the major customer-facing sections of the paper, including on longer-term electricity demand-side developments and especially on developments in household automation and household-level thermal storage.

Paper 12 – ‘The household electricity demand-side & the GB electricity markets’. Judith Ward & Sharon Darcy led on this paper. The paper explored in detail how and when households are likely to participate in practice in the evolving GB demand-side electricity markets, what key regulatory and commercial barriers

might be, and discussed at length the potential opportunities - and also the necessary safeguards (macro, micro) – for participation in the demand-side by smart electricity household customers and consumers.

Paper 13 - ‘Realising the resource – GB Electricity Demand Project Overview’.

This final overview paper was pulled together by Clare Dudeney together with Judith Ward. The paper summarises the main project lessons, sign-posts readers to individual project papers and identifies gaps and key issues yet to be tackled going forwards.

In 2013 & 2014, there were six meetings of the Smart Demand Forum³ and two major Sustainability First dissemination events, on an invitation basis, each regarded as highly successful with extremely positive feedback.

- ‘GB Electricity Demand : realising the resource’ – a major workshop on 16 May 2013 for around 100 invited experts, in partnership with the UKERC Meeting Place (UK Energy Research Centre) and National Grid. Participants were from all parts of the demand-side value chain, as well as government, the regulator, universities, and NGOs. In the evening, Ofgem kindly hosted a high-level discussion dinner on behalf of Sustainability First to consider future developments for the GB electricity demand-side.
- ‘The Smart Electricity Consumer’ – a major workshop held on 5 November 2014, which brought the final phase of the GB Electricity Demand project to a strong close. Sustainability First partnered with SmartGrid GB, tech-UK, PRASEG (Parliamentary Renewables & Sustainable Alternative Energy Group) & Citizens Advice. Some 60-70 people participated from the energy companies, the government, the regulator, the green-tech sector, the supply-chain and NGOs. It was judged a very useful event.

4. Customer-Led Network Revolution (CLNR) project

The Low Carbon Network Fund (LCNF) projects are trialling a range of existing and new network technologies tied into the demand-side, to accelerate decarbonisation. Northern Powergrid led the four year CLNR project and other partners included British Gas. Sustainability First provided ‘expert challenge’ assistance to the project, and assisted with knowledge sharing and dissemination, including the presentation of the findings from the project. Sustainability First also researched and wrote a paper on ‘Lessons from CLNR Trial recruitment’ (CLNR-L036), published on the project web site⁴. Sustainability First has also recently written a paper on the lessons learnt from the installation of trial equipment - smart meters and smart appliances ((CLNR-L262) published in February 2015).

³ 24 January 2013, 9 May 2013, 25 July 2013, 24 October 2013, 6 February 2014 and 8 May 2014.

⁴ <http://www.networkrevolution.co.uk/project-library/project-lessons-learned-trial-recruitment-customer-led-network-revolution-trials/>

5. Water Consumers – Today & Tomorrow

SF's paper by Sharon Darcy, Sustainability First associate, 'Water Consumers – Today and Tomorrow : aligning the short and long-term interests of water and sewerage consumers', was published by Sustainability First website in October 2013. This coincided with a period of considerable interest in water sector policy and regulation, including passage of the Water Bill 2013-14 and the water company Ofwat water price control process.

Briefing Notes on the proposed new Resilience Duty for Ofwat were circulated to selected MPs, Ofwat and the Public Bill Committee for the Water Bill scrutiny process in December 2013. Some, but not quite all, of the SF concerns with Clause 22 were addressed by the Government.

Sustainability First held a Round Table on '**Resilience in Water Supply : what is it and what's the vision ?**' on 27 March 2014, with representation from Ofwat, water companies, investors and the water consumer & research bodies. Discussion drew on the key issues identified in the SF paper on resilient water supply (long-run & strategic approaches to regulation, water company business models, and how to drive more innovative approaches to water supply management, including on the demand-side).

6. Dissemination of research and policy inputs

During 2013 and 2014, Sustainability First has continued to present the findings of its research on the GB Electricity Demand project at a range of conferences and other platforms. Sustainability First has also provided several inputs to Government and to parliamentary calls for evidence:

- A submission to DECC Call for Evidence on Community Energy stressed the need for DECC to address certain administrative and regulatory barriers which presently prevent the matching / offsetting of locally produced energy with local demand, where this is cost-efficient.
- A submission to the Energy and Climate Change Select Committee to the Inquiry on electricity demand-side measures summarising the findings from the GB electricity Demand Project.
- A submission to the Energy and Climate Change Select Committee to the Inquiry on future energy challenges proposing ways to improve investor confidence in Government low-carbon interventions, drawing on work from a forthcoming SF discussion paper⁵.

⁵ Lets Get it Right : A suggested framework for improving Government low carbon interventions'. A discussion paper by Jon Bird. Associate. Sustainability First (publication March 2015).

- An informal briefing seminar on the electricity demand-side (14 October 2014) to the House of Lords Science & Technology Committee Inquiry into The Resilience of the Electricity System.

7. Communication

In 2014, Sustainability First began a new blog to provide short articles summarising our research findings. We also started a debate about the nature of sustainability today – which we will run forward into our celebration of Sustainability First at 15, in June 2015⁶. We also contributed to the online magazine, New Power, about the GB Electricity Demand project.

⁶ <https://sustainability1st.wordpress.com/>

GB Electricity Demand Project papers – www.sustainabilityfirst.org.uk	
1	GB Electricity Demand – context and 2010 baseline data
2	GB Electricity Demand 2010 and 2025 – Initial Brattle Demand-Side Model: scope for demand reduction and flexible response.
3	What demand-side services could customers offer? <ul style="list-style-type: none"> • Household customers. • Industry customers.
4	What demand-side services can provide value to the electricity sector?
5	The electricity demand-side & wider energy policy developments
6	What demand-side services does Distributed Generation bring to the electricity system?
7	Evolution of commercial arrangements for more active customer & consumer involvement in the electricity demand-side.
8	Electricity demand and household consumer issues
9	GB Electricity Demand – 2012 and 2025. Impacts of demand reduction and demand shifting on wholesale prices and carbon emissions. Results of updated Brattle modelling.
10	The electricity demand-side & local energy: how does the electricity system treat ‘local’?.
11	How could electricity demand-side innovation serve customers in the longer term? Joint paper with Frontier Economics.
12	The household electricity demand-side & participation in the GB electricity markets.
13	Realising the Resource: GB Electricity Demand Project Overview.

Sustainability First is a registered charity number 107899.

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