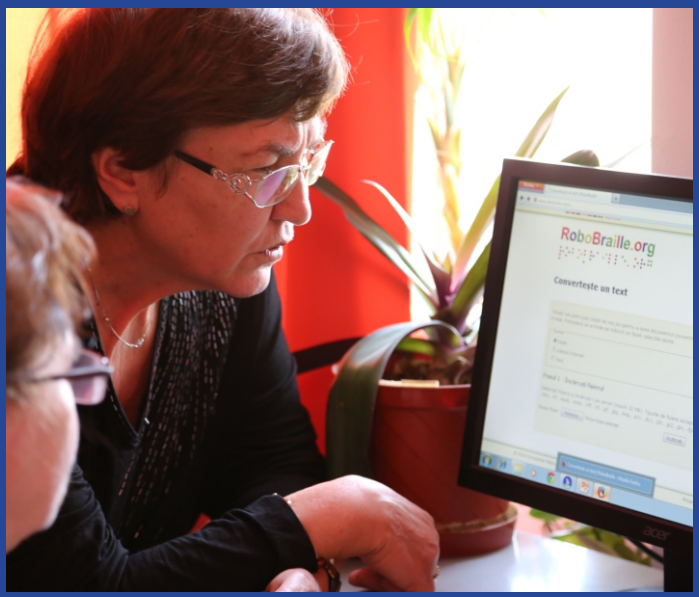






Energy for **all** - **Innovate** for **all**

Project Inspire - Full Report
Innovation and consumer vulnerability: improving service and quality of life for energy customers in vulnerable situations

Sustainability first



This report was written by Zoe McLeod (centre) with support from Judith Ward (left) and Maxine Frerk (right). It forms part of Sustainability First's Project Inspire, which aims to improve service delivery and quality of life for energy customers in vulnerable situations.

About Sustainability First

Sustainability First is an environmental think tank focused on practical solutions for the energy and water sectors. We are a registered charity.

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Independence

It should be noted that this report is independent of the Project Group, with decisions on content and editorial control resting with Sustainability First.

Contents

Executive summary 4

Recommendations 10

1. Background 14
- Rationale 14
- Aims 14
- The Inspire Project Group 15
- Independence 15
- Report scope 15

2. Innovation and vulnerability 16
- Defining innovation 16
- Defining vulnerability 16
- Why innovate? 17
- Vulnerability today 18
- Future vulnerability 19

3. Methodology 21
- Research overview 21
- Desk research and online survey 21
- Stakeholder interviews 21
- Case study identification 22
- Case study categorisation and shortlisting 23
- Independent judging 24
- Case study health warnings! 25
- Types of case study 26

4. The regulatory framework for innovation and consumer vulnerability 27
- The Priority Services Register 27
- Supplier obligations 27
- Network company incentives 28
- Reputational regulation 30
- The different contexts of innovation 30

5. Guides to standard, good and innovative practice (including case studies) 33
- Case study key 33
- Guide 1: Identifying vulnerability 35
- Guide 2: Improving access 53
- Guide 3: Safety and peace of mind 70
- Guide 4: Affordability – supporting customers on low incomes and in debt 86

6. Stakeholder views on vulnerability innovation 100
- Temperature check: views on vulnerability innovation today 100
- Identifying and sharing of innovative practice 101
- Views on the tension between competition and sharing/collaboration 103
- Company views on the benefits of vulnerability innovation 105
- Barriers to vulnerability innovation 106
  - *for energy suppliers and network companies* 106
  - *supplier-only* 107
  - *both networks and suppliers* 109
  - *for smaller suppliers* 112
  - *for product and service innovators* 114
  - *customer-facing service providers* 116
  - *views on regulation and government policy* 117
- Vulnerability innovation enablers 119

7. Embedding vulnerability innovation: The Sustainability First Vulnerability Innovation Flight path 128
- Embedding vulnerability innovation case studies 133

8. Smarter world: what's in it for customers in vulnerable situations? 141
- Key technological trends impacting customers in vulnerable situations 142
- Great expectations? – stakeholders' views on the future 145
- Ten benefits a smarter world could deliver for customers in vulnerable situations 146
- Ten steps to 'smart for all' 167

Conclusion 174

Appendices
- 1 - Case study key and index 175
- 2 - Online survey questions 180
- 3 - Project Inspire interviewees 184
- 4 - Project Inspire semi-structured Interview questions 186
- 5 - The Energy for All Innovation Day – judges 191
- 6 - Guidance provided to judges to help them assess innovations 195

Executive summary and recommendations

Overview

With more than 8.5 million smart meters now installed in homes in Great Britain, we are on the cusp of a digital revolution in energy. Powerful data-processing capability, artificial intelligence and new technologies are also combining to fundamentally change how we generate, store, provide, use, structure and pay for our energy.

In this transforming world, Sustainability First set up Project Inspire to help ensure that *all* consumers, including the millions who are potentially vulnerable, are not just protected but also experience the *benefits* of change. 'Innovation for all' is needed to meet the current, future and unarticulated needs of those in vulnerable situations and to do so more effectively and cost efficiently. There are of course potential benefits to business and wider society from 'vulnerability innovation'.

With Ofgem's move away from prescription to more principles-based regulation there is an expectation that competition will drive companies to be more flexible, targeted and innovative in how they identify, understand and respond to the different needs of consumers. For suppliers especially, outcomes-based regulation and the 'vulnerability principle' signal an opportunity to refocus attention on the quality of service provided to those with diverse additional needs and to meet rising expectations in our smarter world.

Networks too are expected to innovate. The next round of the RIIO price control will play an important role in ensuring that companies put the needs of all consumers, including the most vulnerable, at the heart of their businesses. Alongside this, both networks and suppliers are encouraged, including by Ofgem and by government, to share learning and to collaborate where it is in the interests of those with additional needs.

Our five vulnerability tools

This is Project Inspire's - *Energy for All – Innovate for All*'s full report. It includes:

1. A set of **18 recommendations** outlined below. Taken together, these form a new framework that can catalyse effective innovation for energy customers in vulnerable situations.

2. A Sustainability First **Vulnerability Innovation Flight Path**. This new tool will help companies and others think about their internal processes and company governance arrangements to embed vulnerability and enable innovation for energy customers with additional needs.

3. Four **practical guides** to standard, good and innovative practice to help companies and others improve service delivery and quality of life for customers in the following areas:
   - Identifying customers with additional needs
   - Improving access
   - Affordability – supporting customers on low incomes and in debt, and
   - Security and peace of mind.

   Innovation and good practice are illustrated with more than 70 case studies. An index to all these case studies and award-winning innovations is in Appendix 1.

4. A high-level overview of the current ***regulatory framework*** (Part 4) as it applies to innovation for customers in vulnerable situations predominantly written by Maxine Frerk. Each good practice guide also includes an overview of the main vulnerability regulatory obligations relating to that area.

5. A practical look (including case studies) at how ***smart innovation*** can better serve vulnerable customers, both today and tomorrow. Being aware of the potential opportunities that exist is intended to focus attention on ensuring future benefits are delivered.

Our research and case studies show that there are significant improvements, including relatively 'quick wins', that many companies could and should make to the way in which they identify, support and empower customers in vulnerable situations. Our findings also identify that there is much that can and should be done to *enable* 'innovation for all' – by companies, government, regulators, charities and consumers themselves. This is essential if all energy customers are to benefit in our 'smarter world'. While this research is focused on the energy sector, many of the approaches outlined could, and in some cases already are, being used in other regulated markets. Our intention is that our five vulnerability tools, including the scores of case studies in this report will be both a resource and a cross-sector inspiration for utilities.

Key findings

Vulnerability innovation today

In Great Britain there are pockets of real innovation in how energy companies support and empower their customers in vulnerable situations. In some areas, such as supporting customers in financial difficulty, there is seemingly more activity in energy than a number of other sectors or internationally. Most 'vulnerability innovation' by energy companies that we identified is not transformational, but rather the result of incremental improvements in company approaches. Many companies are still focused on getting the basics right for customers with additional needs – rather than 'pushing boundaries'. This is perceived as particularly the case for a number of smaller suppliers. Even those smaller suppliers with explicit social goals, despite their best intentions, may lack the vulnerability skills and understanding needed to catalyse effective innovation.

The identification and sharing of innovative and good practice

When we started our research much vulnerability innovation by energy companies was not known about or shared, even within the energy industry. New services are also often not well promoted to customers who could benefit from them.[1] In some instances, companies are not even aware that they are doing something particularly beneficial, above and beyond standard energy company practice. The key challenge is how to turn notable pockets of effective innovation into industry-wide progress across all suppliers – irrespective of their size or business model – in a timely way that will improve levels of service for all consumers.

Our Project has helped catalyse a step change in the sharing of good practice with welcome initiatives by EnergyUK (EUK), the UK Regulators Network (UKRN), National Energy Action, Ofgem and Citizens Advice[2]. The sharing of vulnerability innovation between energy companies is improving with networks, particularly gas networks, seemingly better than suppliers. However, only a minority of companies have mechanisms in place to *proactively* identify vulnerability *innovation*, especially from outside the energy sector or from consumer and disability groups. In principle there is strong support among all parties for greater sharing of innovation that can benefit customers in vulnerable situations, including what doesn't work. In practice there are some challenges to this. There are some frustrations within industry over seemingly inconsistent and unrealistic messaging on the sharing of vulnerability innovation with Ofgem and government wanting companies to both compete and collaborate.[3]

[1] Ofgem's review of the Priority Services Register also highlights that awareness of the services available is low and that companies should develop more innovative ways to increase awareness and promote take-up. Priority Services Register Review: Statutory Consultation, Ofgem, 13 June 2016.

[2] Citizens Advice are producing a series of good practice guides. There are also case studies in Ofgem's new look social obligations/vulnerability report; UKRN's report on data; and Energy UK has worked with Money Advice Trust to produce a good practice guide to Vulnerability, mental health, and the energy sector.

[3] For example, Ofgem's guidance note on cooperation between competitors on the smart meter rollout identifies vulnerability and energy efficiency as two potential areas for collaboration yet competition is expected to drive innovation in both of these areas.

Network incentives are effective and needed

Under their price control process, electricity and gas network companies have financial and reputational incentives around vulnerability. While not perfect, for some networks, these have been a clear driver of considerable innovation and focus on vulnerable customers. Many see the networks as more innovative in supporting customers in vulnerable situations than suppliers. Indeed, network companies won all four of our consumer-judged Sustainability First Energy for All Innovation 'Gold Awards'.

Network incentives are needed for vulnerability innovation. This kind of innovation can be more complex and riskier than 'standard innovation' and culturally a number of companies have still not properly embedded vulnerability. For example, there is a greater chance of consumer detriment if a project fails, and if things go wrong of negative publicity, and regulatory scrutiny. Projects can often be more complex and harder to deliver. This is especially the case with initiatives that require value to be drawn from coordinating multiple agencies across different sectors (e.g. to tackle fuel poverty – health, housing, energy, water) or which require engagement with hard to reach groups. It can also be harder to pull together the business case for vulnerability innovation, especially if value is pulled from multiple departments within an organisation. These are challenges faced by all energy network companies and also by suppliers and some supply chain innovators.

There were a handful of concerns raised about the fairness and transparency of the assessment process for the gas and electricity network incentives, including from those close to the process. Also, a feeling that incentives encouraged a focus on 'visibly wizzy things' that look good rather than what is most needed in terms of minimum service levels and existing project consolidation. Most interviewees encouraged a sharper focus on evaluating the consumer and wider benefits delivered, alongside more feedback to companies. The seemingly 'higher achievers' called for mechanisms to further distinguish between good and truly innovative companies.

Competition alone is unlikely to deliver the supply-side innovation that vulnerable customers require (at least not for all customers with additional needs in a timely way)

In the supply market, the standard market view is that competition is expected to drive improvements in service for customers in vulnerable situations, with less prescriptive and more outcomes-based regulation enabling more innovative and tailored approaches. In practice, suppliers believe there are insufficient commercial drivers to innovate in a timely way for some groups. General awareness of the commercial opportunities is relatively poor and there is a mismatch in expectations between energy suppliers on the one hand, and supply chain innovators and consumer groups on the other, in terms of how they perceive the value of 'the purple and vulnerability pounds'. With a couple of notable exceptions, those with additional needs are often seen by suppliers as having a higher cost to serve, sometimes higher debt levels, relatively weak buying power, and weak market demand. Suppliers primarily look to innovation in this space to help in reducing extra costs associated with vulnerable customers, rather than to win and retain these customers.

Some smaller companies actively avoid vulnerable customer market segments. The 250,000-customer threshold for Warm Home Discount and the Energy Company Obligation were thought by some interviewees to be 'sending the wrong message' to new entrants, encouraging them to see vulnerability as something they don't need to focus on until they are much bigger. With the rapid increase in the number of energy providers (there are now more than 60 suppliers in the market), incentivising vulnerability innovation among *all* energy companies and thus raising standards across the board for *all* customers in vulnerable situations, is particularly important.

This perception of low commercial returns, combined with the added risks and complexity of initiatives targeted at vulnerable customer groups (outlined

Guidance note on cooperation between competitors on the smart meter rollout, Ofgem, 12 May 2016

above), is hampering innovation. The notable exceptions to this are new approaches to reduce bad debt, which, while slow to develop, have resulted in more proactive action to prevent debt build-up and support customers in or at risk of payment difficulties. In addition, the smart pay as you go market,[4] and the living services markets (connected home safety, health and assistive living markets) for older and disabled people, encouragingly are seen as market opportunities. Each are regarded as potentially significant future mass-market developments. Once these are mainstream, each could and should have a transformational role.

Vulnerability risks slipping down energy suppliers' agendas due to weight of regulatory change and increased competition

The sheer weight of regulatory and systems change (e.g. faster switching, smart meter rollout, settlement reform, Priority Services Register changes, Competition and Markets Authority reforms, tariff caps) also means, even in larger companies with a strong historic social focus, that vulnerability *innovation* may be slipping down the agenda. Political, economic and regulatory uncertainty is deterring some already risk-averse companies from investing in new ideas. Others report that increased competition is reducing margins and therefore also discretionary spend for vulnerability innovation.

Supply chain innovators and service providers face particular barriers

Supply chain innovators who provide products and services to energy companies, who in turn offer those innovations to consumers, report a desire to be more creative and inclusive. However, they can be restricted by: overly prescriptive procurement specifications, which can encourage a default to mass-market products at lowest cost rather than more effective offerings; and inflexible company legacy IT systems. Weak customer demand, in particular, can make it hard to prove the market opportunity and get company buy-in. This includes demand and understanding of the advantages from end beneficiaries and those that might purchase products on their behalf (e.g. family and carers). Risk-averse energy companies can prefer to purchase already proven technologies. While innovators can lead on pilots to demonstrate the value of their ideas, in practice this can also be very risky for their business. There appears to be a 'pilot-funding gap' for many small innovators who wish specifically to develop products to help vulnerable energy customers. Few innovation schemes seem to actively encourage or reward consideration of the needs of *all* customers. Outside the energy sector (though not only), awareness of the mechanisms available to support new ideas and help mitigate risk such as Ofgem's Innovation Link and regulatory sandbox, seem to be low.

The wider political and regulatory climate is an important enabler for vulnerability innovation

The political and regulatory climate is seen to have an important role to play in encouraging vulnerability innovation. The threat of regulator intervention and/or an energy company's desire to: (a) get ahead of the regulatory curve, and (b) be in the regulator's or government's good books, as well as the wider political and campaigning climate, are important enablers that should not be underestimated. In particular, they encourage company leaders to prioritise new initiatives and resources that can support customers with additional needs. Much 'big project' supplier innovation to support customers in vulnerable situations also appears to be funded via money allocated by the regulator for return to customers. For example, so-called redress[5] funds, unclaimed account balances and unallocated prepayment payments. Ofgem's decision to appoint a third party, Energy Savings Trust (EST), to manage and allocate redress funds to charitable organisations will have notable implications for future funding of vulnerability innovation by the larger energy

[4] It should be noted that some believe the prepay cap will delay innovation in this area and there was some evidence presented that this was already happening.

[5] Companies may volunteer to pay a sum of money to appropriate charities, trusts or organisations in lieu of, or in addition to, a financial penalty for breaches of licence conditions. Companies may also volunteer these payments to remedy any harm to consumers, in addition to compensation to those directly affected, where Ofgem has not conducted a formal investigation.

companies in particular. We welcome the Authority's Guidance on the allocation of redress funds, which has taken on board early learning from Project Inspire with its focus on innovation.[6] It should be noted, however, that not all innovation requires substantial resources. We have identified a number of relatively 'quick wins' in our research that are outlined in the case studies.

There is support for more comparative company vulnerability performance information

There is broad support (albeit more cautious and not without caveats from energy companies) for publishing more comparative data on company performance and service – both customer- and industry-facing. Where this exists (e.g. the energy network incentives 'league tables' and Ofgem's domestic suppliers' social obligations reporting), it can be influential in driving improvements. At best some companies are motivated to innovate since they want to be 'best in class', while others are motivated by a desire not to be out of step with the industry, nor to find themselves in the bottom quartile.

A lack of information and understanding about vulnerability is limiting innovation

A general lack of information and understanding about the diverse experiences of different vulnerable customer segments in the energy sector and the commercial potential in providing improved products and service to these different groups is also limiting innovation. This is a theme picked up on in the National Audit Office (NAO)'s 'Vulnerable consumers in regulated industries' report[7] and Scope's Extra Costs Commission.[8] This lack of understanding is arguably not helped by the language of vulnerability, in particular the expression 'vulnerable customers' which can imply a homogenous group.

Companies are not able to develop new products, services and approaches to meet customers' diverse needs, and priorities, where they do not have a detailed grasp of what those needs or wants are. For example, with a couple of notable good-practice exceptions, many companies do not seem to routinely monitor and collect customer experience (satisfaction/complaints) data broken down by key vulnerability demographics. While less of an issue for networks (but still an issue for some), our review of potential case studies also found that vulnerability initiatives and projects are frequently poorly evaluated. Companies fail to properly assess benefits to consumers, wider society or the business. As the NAO points out in its report, the societal value of vulnerability innovation including cross-sector benefits to health, housing and welfare is also not properly understood. Recognising these issues, we welcome Energy UK's proposals for a Vulnerability Commission. If done well, this has the potential to make an important contribution to the gaps in the evidence base in this area.

More must be done to unlock the power of data to improve service and quality of life for customers with additional needs

Innovative use of data to *proactively support* and *empower* customers in vulnerable situations has been slow to develop (particularly by suppliers) but is improving. As a number of our case studies show, there has been an increase in the strategic sharing of information between energy suppliers, networks, water companies and other agencies, which has helped improve how they identify, target and provide timely support for customers with additional needs. The Digital Economy Act 2017,[9] the standardisation of vulnerability 'needs codes',[10] and changes to the Priority Services Register licence conditions on data sharing are expected to further facilitate this.
Some companies however are still not maximising opportunities to collect relevant data and analyse

[6] Ofgem has appointed the Energy Saving Trust (EST) as the independent Service Provider to manage and allocate voluntary redress funds. Authority guidance on the allocation of redress funds, Ofgem, 24 August 2017
[7] Vulnerable Customers in Regulated Industries, National Audit Office, 31 March 2017
[8] Extra Costs Commission Final Report, Scope, June 2015

[9] The Digital Economy Act 2017 will enable more sharing of information about customers' vulnerability between public agencies and water, gas and electricity companies, in particular to identify customers living in fuel poverty
[10] http://www.energynetworks.org/info/safeguarding-customers/safeguarding-customers-overview.html

insights from their own operations and customer service functions. Nor are they always using publicly available information effectively to inform and improve their service for customers in vulnerable situations. This may be in part due to a lack of in-house data skills and knowledge. Data privacy regulation is also perceived as a barrier – adding risk and complexity, e.g. 'data-based innovation' may require bespoke infrastructure and the setting of parameters for sharing data to ensure valid privacy and security issues are addressed. In preparing for General Data Protection Regulation (GDPR) companies should explore how they can improve service delivery to customers in vulnerable situations through making better use of data.

There is widespread recognition of the potential benefits of smart meter data and big data

There is widespread recognition that smart meter data, and so-called 'big data' offer new and growing opportunities to improve service and quality of life for customers with additional needs. For example, a number of our case studies illustrate how data can be used to empower customers to more easily manage their energy use, budget, switch energy provider and to be and feel safe. For the future, the extent to which companies (not just energy suppliers and networks) can access information could prove an important benchmark. We welcome therefore the work of the UK Regulators Network's (UKRN), which has recently set out its aspirations for the water and energy sector to make better use of data.[11] At Sustainability First, together with CSE and UCL, we are setting up a new smart meter Energy Data Public Interest Advisory Group, which will look to ensure that the wider public policy benefits of smart data are properly explained and realised.

Vulnerability and inclusive design are not yet properly embedded in most energy companies – this is limiting innovation

We found most staff working on vulnerability issues are both passionate and committed about improving the lives of customers with additional needs. However, at times they face barriers internally when trying to get new ideas off the ground. For example, innovation and vulnerability teams may be working in silos, separate from each other and the wider organisation; there may not be a clear route for and ownership of vulnerability decision-making; and importantly (despite improvements in training) staff may not have the skills, knowledge and 'confidence to care'. Where they do have the skills and knowledge they may also not always be given the flexibility and power to take action. This is particularly important as the majority of innovations we identified were initiated by frontline staff, middle management or external actors who approached the company with ideas. In addition, company leaders: may see vulnerability innovation as a 'nice to have' or 'niche'; not reward or recognise staff working in these areas; and not embed the needs of all consumers into their business decision-making. All of which make it harder within a company to grow innovative ideas and then prepare, resource and get approval for vulnerability business cases.

Ofgem's Consumer Vulnerability Strategy sets out the expectation that companies will establish their practice and products with vulnerable consumers in mind. We found that while the concept of inclusive design was well recognised, in practice, with some notable exceptions, it was not often implemented. Unsurprisingly, companies' internal culture, reflected in their leadership, structures and processes, plays an important role in how inclusive and innovative they are in supporting vulnerable customers; most expect transformation innovation to come from outside the larger energy suppliers. From our discussions with stakeholders and based on our findings of reviewing those energy companies who have been the most innovative, Sustainability First has developed a five-step 'Vulnerability Innovation Flight Path'. This is designed to help companies think about the kinds of internal processes and governance arrangements they might implement to enable innovation that serves all their customers (see Section 7).

[11] Better use of data and information sharing to identify customers in vulnerable situations: August Project Update, UKRN, 14 August 2017.

Recommendations

It is important to ensure that the right framework is in place to deliver the innovation necessary to meet current and future vulnerable customers' needs.

Identifying and sharing innovative practice

> Recommendation 1

We welcome recent initiatives by Ofgem, Energy UK (EUK), the UK Regulators Network (UKRN) and Citizens Advice to identify and share good practice. All parties, including companies, consumer and disability groups and regulators, should build on this work and consider what more they can do to identify and share vulnerability innovation and learning, including what doesn't work, between:

- Electricity and gas suppliers
- Energy companies and disability/consumer groups
- Across sectors and internationally.

Improving the vulnerability evidence base

> Recommendation 2

In line with the findings of both the National Audit Office and Scope's Extra Costs Commission, we found that a stronger evidence base is needed to understand vulnerable customers' experiences in the energy sector and their market value. This would help inform where innovation is most needed and investment might be most profitable. In order to improve the collection and availability of data about customers in vulnerable situations:

a) Industry should commission research into the commercial and market opportunities to retailers of different vulnerable energy customer segments, including potential impact on reducing overall cost-to-serve. This is in support of a market-led case for more innovation to focus on vulnerable customers.
b) Energy networks and suppliers should:
    - Proactively monitor and research the experience of their vulnerable customers e.g. capture complaints data and satisfaction data broken down by key vulnerability demographics.
    - Develop effective and strategic working relationships with organisations working with vulnerable customers. This includes 'co-designing' solutions to problems with those who experience them.
    - Draw upon staff experience so that their staff become principle 'agents of change'.
    - Review how they evaluate the impact of vulnerability initiatives to see where improvements can be made. This should explain the benefits of approaches in terms of the customer experience, the business and wider societal benefits (both monetised and non-monetised).
c) We welcome Ofgem's new Vulnerable consumers in the retail market report: 2017, which provides useful information and benchmarks. We support this being further developed in 2018, to draw upon a wider evidence base, including from networks, consumer and disability groups and the Energy Ombudsman. We also support Energy UK's proposed Vulnerability Commission, which has the potential to make a significant contribution to the gaps in the vulnerability evidence base outlined.

Mitigating additional risk from vulnerability innovation

> Recommendation 3

Ofgem should *further* promote The Innovation Link,[12] including to small suppliers and non-energy communities. This includes adding a vulnerability link on the Innovation Link page.

> Recommendation 4

Energy UK and ENA should continue to offer, and increase the visibility of, their 'open door policy' to any innovator who seeks energy company engagement to deliver an initiative that benefits vulnerable customers. This should include promoting a clear channel on their website.

Supporting small supplier innovation

> Recommendation 5

Prior to grant of a supply licence Ofgem should require new market entrants to *demonstrate* their understanding of the vulnerability principle and their related current and future responsibilities in relation to customers in vulnerable situations. This would help embed the needs of vulnerable customers into small supplier business activities from day one – facilitating company growth and related innovation with the needs of all consumers in mind.

Network vulnerability incentives

> Recommendation 6

Ofgem should have a vulnerability incentive in the next round of network regulation, RIIO2. The approach should ensure that the networks deliver outcomes valued by customers in vulnerable situations. Incentives should be designed to:

- Encourage collaboration and sharing of information among networks, energy retailers and others
- Allow for flexibility in innovation
- Respond to rising standards and expectations – not set the bar too low
- Properly reward those that are delivering impact at a higher level
- Ensure decision-making by Ofgem on the assessment of companies and allocation of any rewards is transparent and consistent
- Reward effective not just 'sparkly' innovations, which are embedded into business as usual practices.

Thought should also be given by Ofgem as to whether innovation funding such as the electricity and gas network competitions (NIC) should specify that companies consider the implications for vulnerable customers, and how this might best be done.

Financial support for vulnerability innovation

> Recommendation 7

Redress monies have been a valuable funding source for energy innovation that supports customers in vulnerable situations. We welcome Ofgem's Guidance on the allocation of redress funds that encourages a focus on innovation to support vulnerable customers. The Energy Savings Trust (EST) should ensure it has appropriate understanding of energy vulnerability issues and:

- Identify major gaps in current innovation funding for innovation that could support customers with additional needs
- Focus funding on where there are weak commercial drivers for innovation but high customer need i.e. so probably not smart prepay initiatives
- Require effective evaluations, sharing of innovation and lessons learned.

[12] This is a service that offers feedback to innovators on the regulatory implications of their idea. It provides innovators with a Case Manager and helps them to understand how the regulation may impact on them, and enables Ofgem to consider how the regulations should change going forward. The Innovation Link also provides a space for innovators to trial their ideas, ensuring that consumers are protected.

> Recommendation 8

Innovation funding schemes paid for by customers and taxpayers' money, such as the government's Industrial Strategy Challenge Fund, should explore, where appropriate, how they can best incentivise companies to consider the needs of *all* consumers. This includes in their funding application and assessment processes.

Strengthening incentives including for consumer demand

> Recommendation 9

Ofgem should consider collecting and publishing more comparative company performance information in relation to service for vulnerable customers – to help drive improvements within the industry.

> Recommendation 10

Citizens Advice should develop information on supplier service for vulnerable customers that will allow cross-industry comparison of performance and potentially inform switching decisions. That is (a) information directed at customers with additional needs to help them compare service levels; e.g. so prepay customers can compare top-up options or non-disconnection times provided by different companies, (b) also, information for socially minded customers who may wish to support more inclusive suppliers.

> Recommendation 11

We support the Extra Costs Commission's recommendation that vulnerable customers and those that represent them should be 'bold and loud' and build consumer power behind the purple pound and the grey pound. In particular, using initiatives such as the disability review site Rate It!, they should speak out when companies do not meet their need to help drive improvements, including through innovation.

Embedding inclusivity into company culture

> Recommendation 12

To be most effective, energy suppliers and networks must embed vulnerability into their organisational structures. For example:

- Develop and regularly update their vulnerability strategy
- Ensure they think about the implications of key decisions on different customer segments
- Design services inclusively
- Train and empower staff so that they have the flexibility, autonomy, skills and 'confidence to care' and to innovate
- Recognise staff for their successful vulnerability innovations – big and small.

> Recommendation 13

All energy companies should ensure they have a clear 'pathway' or 'flight path' for ideas to flow from all levels of the company and from outside their organisation to a decision and, if successful, to delivery. For example, they should have:

- A known person/s with responsibility for vulnerability decision-making
- Mechanisms to capture ideas from front-line staff and partner organisations
- Where appropriate, cross-departmental mechanisms to share insight, ideas and facilitate decision-making.

In judging suppliers' conduct, including in relation to the vulnerability principle, and the networks' eligibility for incentives, we would expect Ofgem to look at the internal arrangements that companies have for identifying better ways of delivering good customer service to vulnerable customers. In this report we outline examples of good and innovative practice to embed innovation for customers with additional needs.

Ensuring a smarter future works for all consumers

> Recommendation 14

As part of the Smart Systems and Flexibility Plan, government and Ofgem have committed to continue to consider the potential social impacts of smart tariffs. They should also consider how they might wish to monitor the wider distributional impacts of smart energy innovation for energy customers with additional needs.

> Recommendation 15

Energy companies should develop and publish comprehensive indicators to demonstrate how they are using smart meters and new technologies to deliver improved service and quality of life to customers with additional needs. These could be:

- Outcomes-based e.g. satisfaction levels, complaints received, energy reduction broken down by key vulnerability demographics, *and/or*
- Outputs-orientated e.g. the number of customers with additional needs: provided with an accessible in-home display; who have received extra help during the smart meter installation; were provided with alternative equipment to replace condemned equipment.

This will help companies to demonstrate fair treatment of vulnerable customers as smart meters become the norm, and will support Ofgem and government in ensuring access to the benefits of smart innovations for all consumers.

> Recommendation 16

Ensuring usability or user's ability to use smart products and service is an important factor in minimising the digital divide and ensuring the benefits of innovation are delivered for all.

a. Companies should ensure that, wherever possible their products and services are inclusively designed and are tested on customers with additional needs early in development.
b. In its Smart Systems and Flexibility Plan, government outlined its intention to consult on seeking powers to set standards for smart appliances in relation to interoperability, data privacy, cyber and grid security. They should also consider a customer accessibility or inclusivity standard as part of this process.

> Recommendation 17

Government, Ofgem, energy companies and consumer/disability groups should work with organisations such as Digital Catapult and the Open Data Institute to explore how they can open up anonymised datasets in a timely, secure privacy-friendly way to enable all parties including non-energy parties to innovate and collaborate around vulnerability issues. The UKRN may want to consider how it can facilitate this as part of phase two of its data project.

> Recommendation 18

In preparing for General Data Protection Regulation (GDPR) companies should also explore how they can improve service delivery to customers in vulnerable situations through making better use of data.

1 Background

Rationale

The last two decades have seen huge technological and social change – first with desktop web, and then with mobile. With more than 8.5 million smart meters now installed in homes in Great Britain,[13] we are on the cusp of a digital revolution in energy. Powerful data-processing capability, artificial intelligence and new technologies are also combining to fundamentally change how we generate, store, provide, use, structure and pay for our energy. This profound change offers real opportunities for customers in vulnerable situations but there are also inevitable challenges.

There is a prevailing view among regulators and government that innovative approaches by companies to serving all customers can and will deliver effective service and conduct for those in vulnerable situations. However, at Sustainability First, we were concerned that current levels of service and expectations among decision-makers and companies of what innovative and good vulnerability practice looks like were arguably lower than they could be, particularly given technological advancements. Indeed, our earlier research with Frontier Economics on distribution network operators' (DNOs) action on vulnerability[14] and Ofgem's 2016 Challenge Panel both highlighted services for customers with additional needs as an area for improvement.[15] Moreover, our wider work outlined a risk that opportunities to deliver benefits to vulnerable customers from smart metering were in danger of being missed. For example, concerns were being raised about customers with additional needs not getting sufficient support during the smart meter installation process.

Aims

We set up Project Inspire to help address these issues; in particular to ensure that smarter technologies and wider innovation deliver improvements in service and quality of life for all consumers, regardless of their personal characteristics, circumstances or situations.

With this report and our wider Project Inspire work, we have three main objectives. These are to:

- **Identify and shine a spotlight on examples of good and innovative practice**. This is to demonstrate the art of the possible and help turn pockets of effective practice into industry-wide practice. We have already made progress in this regard with a number of innovations we identified now being piloted by energy companies. We also hope that the information in this report can be used in the setting of benchmarks for good practice and to challenge assumptions of what is really 'reasonably practicable' for companies to achieve.

[13] From the start of the smart metering programme up until 30 September 2017 around 8.54 million smart meters had been installed in domestic premises across Great Britain. To date more than 9.44 million smart and advanced meters have been installed in homes and businesses. Smart Meters: Quarterly Report to end September 2017, BEIS, 30 November 2017.

[14] Assessment of DNOs action on consumer vulnerability: a report prepared for Ofgem, Sustainability First and Frontier Economics, January 2016.

[15] Both a report for Ofgem on the RIIO-ED1 stakeholder engagement and consumer vulnerability assessment, 'Assessment of DNOs action on consumer vulnerability'; and Ofgem's decision document on the Stakeholder Engagement Incentive 2015–16, identified the quality of the PSR, and the services offered to customers on the PSR, as particular areas for development for many networks – Assessment of DNOs action on consumer vulnerability: a report prepared for Ofgem, Sustainability First and Frontier Economics, January 2016 and Decision on the Stakeholder Engagement Incentive 2015–16: Gas distribution, Ofgem, 28 October 2016. In addition, during Ofgem's consultation on the Priority Services Register only a handful of potential new services were suggested, indicating a lack of awareness as to what might be possible. Ofgem's Challenge Panel in 2016 also found that few suppliers had considered adequately how to support vulnerable consumers to make informed choices or offered products and services appropriate to their characteristics and preferences. Enabling consumers to make informed choices: Findings from the 2016 Challenge Panel, Ofgem, 8 September 2016.

- **Explore and identify perceived barriers and enablers to innovation** that benefit customers in vulnerable situations, e.g. regulatory, financial, cultural, legislative or organisational factors. In the context of principles-based regulation and the next round of network regulation (RIIO2) we wanted to better understand the extent to which energy companies can and are willing to innovate to support customers with additional needs and on low incomes. In particular, to consider if the right mechanisms are in place to deliver the innovation necessary to meet current and future vulnerable customers' needs. If not, what improvements could be made?
- **Horizon-scan** – We wanted to explore the potential opportunities and barriers to better serving vulnerable customers in the future, for example, with the rollout of smart meters, the growth of connected homes and other new technologies. Policymakers have rightly shied away from 'picking winners' but there is a concern that, without a more dedicated focus on the needs of customers in vulnerable situations and more inclusive approaches, many of the 'social benefits' will not be delivered.

The Inspire Project Group

Project Inspire was set up by Sustainability First in October 2016. It is a multi-partner project sponsored by Ofgem, three energy retailers (EDF Energy, E.ON, Scottish Power), two energy networks (SGN, Western Power Distribution), two product manufacturers (geo, Toshiba) and Smart Energy GB. The project has also been actively supported by colleagues in the Department for Business, Energy and Industrial Strategy (BEIS) and Citizens Advice. Together these organisations make up the 'Inspire' Project Group.

The Project Group met three times between October 2016 and June 2017 to discuss approaches to the project, including emerging findings, and also participated in our Sustainability First Energy for All Innovation Event in April 2017. The Project Group provided challenge and expert insight, drawing on their diverse experience and perspectives from across energy networks, suppliers, government, the regulator, product manufacturers and consumer arenas.

Independence

This report is independent with decisions on content and editorial control resting with Sustainability First.

Report scope

This report focuses on innovation that can support *energy* customers in vulnerable situations. However, many of the approaches outlined, could, and in some cases already are, being used in other regulated markets. This is especially important as the NAO reports that 7% of people contacting Citizens Advice have experienced problems in three or four sectors, rising to 11% of those struggling with debt[16].

The report is especially concerned with innovation that can support activity related to the licence requirements of energy suppliers and networks around identifying vulnerability, supporting customers on low incomes and in debt, and ensuring equal outcomes in terms of safety, communication and access. This includes access to the benefits of smart metering.

While we reference some, we have deliberately not looked in depth at new energy technologies that could help tackle fuel poverty. National Energy Action and other charities are doing significant work in this area. We have also not explored the role of government-led fuel poverty programmes such as the Energy Company Obligation (ECO), the Renewable Heat Incentive (RHI) and the Warm Home Discount (WHD) on vulnerability innovation as these are arguably separate projects in their own right.

Lastly, while we reference a handful of third party intermediaries (TPIs) and new energy providers, a systematic review of the way in which non-traditional business models and TPIs could benefit customers with additional needs is not within the scope of this report.

[16] Vulnerable Customers in Regulated Industries, National Audit Office, 31 March 2017

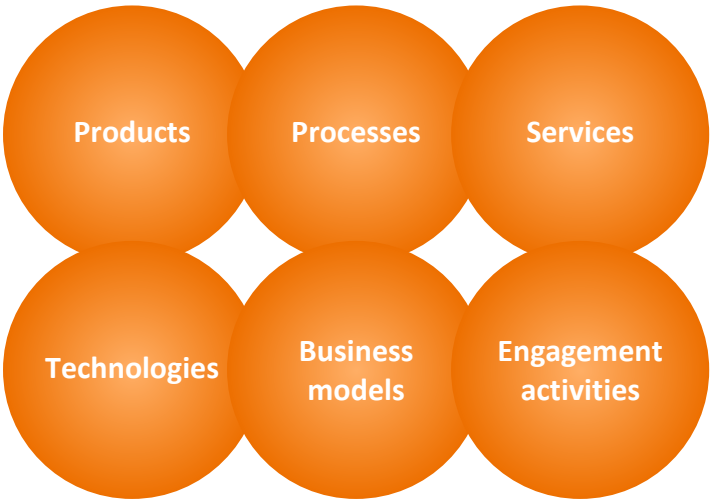
2 Innovation and vulnerability

Defining innovation

For the purpose of Project Inspire we defined innovation as:

A new idea, device or method that delivers better outcomes (or has the potential to deliver a better outcome) for energy customers in vulnerable situations than current standard energy practice.

This may take the form of more effective:



We recognise innovation can be disruptive, or transformational over time, working within the status quo or existing structures ('Foundational'). It can span technologies, systems and business models simultaneously. It can also be incremental – at a company level, simply doing something new, which might in fact be about getting a basic service right.

Most of the 'innovations' outlined in this report are not transformational but they go above minimum standards and obligations or beyond standard industry practice. They deliver or have the potential to deliver better outcomes for consumers in vulnerable situations. Importantly better outcomes can be both financial and/or non-monetised benefits. For example, greater choice, increased convenience, more control, easier access to services, comfort, less anxiety, as well as lower prices.

Defining vulnerability

We adopted Ofgem's definition of energy consumer vulnerability for this report.[17] Importantly, Ofgem talks about 'vulnerable situations' rather than vulnerable customers. A vulnerable situation is one where a person is:

- significantly less able than a typical consumer to protect or represent their own interests; and/or
- significantly more likely to experience detriment, or for that detriment to be more substantial.

This approach recognises that vulnerability is created by a combination of factors: personal characteristics such as age, poor health, or disability; the customer's situation such as living alone, being on a low income or in debt, not having internet access; and the action (or inaction) of energy companies.

Vulnerability can be diverse, complex and transient, with people often having multiple vulnerabilities or needing extra help for short periods at certain times in their life, e.g. if they are ill, are made unemployed, suffer a bereavement, or have a relationship breakdown. Detriment can take many often interconnected forms. For example, financial impacts such as indebtedness or fuel poverty and non-financial impacts such as overall safety, wellbeing, health, engagement in society and markets and inclusion.

In this report, we use the expressions, 'vulnerable consumer', 'customers in vulnerable situations' and 'customers with additional needs' interchangeably. We recognise that while well-designed, inclusive services can help to address many customers' additional needs, including transient needs, that diverse innovations and tailored approaches are also required to meet the diverse requirements of customers in vulnerable situations.

[17] Consumer Vulnerability Strategy Progress Report, Ofgem, September 2015.

Why innovate?



Meeting existing need

For example

- Barriers to communication
- Lack of access to products and services
- Higher safety and protection needs
- Help tackle fuel poverty, prevent debt and support those in financial difficulties



Meeting new requirements

For example

- Changing social needs e.g. growing older population, growing younger disabled population
- Ensure effective protection in a changing environment e.g. new types of vulnerability
- Ensure customers are 'not left behind'
- Meet changing attitudes and rising expectations



Meeting unarticulated need

For example

- Increasing customer satisfaction by providing the best possible service
- Realise wider societal/citizen benefits
- Commercial benefits
- Issues we don't know about – unmet needs



Innovation is especially important

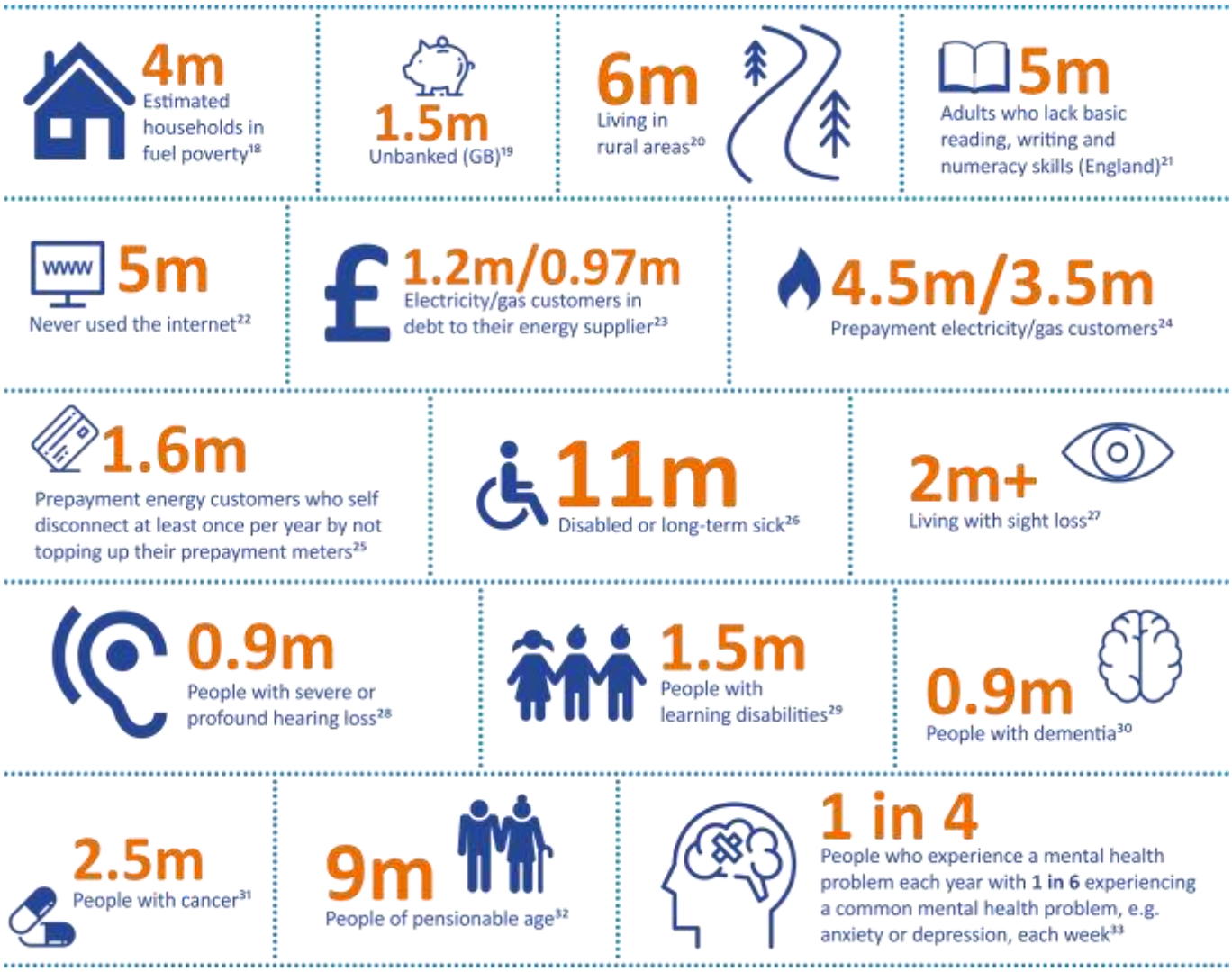
- Energy is an essential service
- For customers with additional needs to ensure 'fairness' and equal access to benefits
- As when problems occur the impact can be more detrimental

Energy is an essential service for wellbeing, security and social participation. Yet the number of consumers who are potentially vulnerable in the energy market at any one time is in the millions (see overleaf). Some interviewees queried how innovative energy companies really needed to be and suggested that they should focus on providing 'a basic decent service' rather than the best possible service for customers. For one consumer rep, consistency had more value than innovation, making it easier to communicate with customers about the support available. However, all recognised that there were many problems faced by vulnerable customers that must still be addressed, and for which innovation is needed. Also, that without innovation, an energy company's service would not keep track with changing needs or rising customer expectations.



Vulnerability today:

a cross-section estimated UK adults except where stated



[18] NEA Conference September 2017. Fuel poverty policy briefing.
[19] Financial Commission Website – http://www.financialinclusioncommission.org.uk/facts
[20] Defined as people living in local authorities which are over 80% rural. Vulnerable Customers in Regulated Industries, NAO, 31 March 2017.
[21] https://www.jrf.org.uk/press/5-million-adults-lack-basic-literacy-and-numeracy-skills
[22] Vulnerable Customers in Regulated Industries, NAO, 31 March 2017.
[23] The number of customers in debt to their electricity and/or gas supplier has been decreasing since 2013 – 1,195,635 for electricity; 971,362 for gas. Vulnerable Customers in the Retail Energy Market, Ofgem, October 2017
[24] Ibid.
[25] Vulnerable Customers in Regulated Industries, NAO, 31 March 2017.
[26] Ibid.
[27] http://www.rnib.org.uk/professionals/knowledge-and-research-hub/key-information-and-statistics
[28] https://www.actiononhearingloss.org.uk/about-us/our-research-and-evidence/facts-and-figures/
[29] Vulnerable Customers in Regulated Industries, NAO, 31 March 2017.
[30] Ibid.
[31] Ibid.
[32] Ibid.
[33] https://www.mind.org.uk/information-support/types-of-mental-health-problems/statistics-and-facts-about-mental-health/how-common-are-mental-health-problems/ - .WgM17YakLow

Future vulnerability: socio-demographic trends



Increasingly ageing population

One in 12 people are expected to be aged over 80 by 2039.[34] People will live longer but likely with multiple health issues and greater care needs. As people get older, usage patterns can also change (e.g. less energy used during after-work peak,[35] but potentially more overall[36]) and carers may take more decisions. There are projected to be more than 2 million people with dementia[37] and 2 million people living with sight loss in 2050 – the latter driven both by an ageing population and growing incidence in some of the underlying causes such as obesity and diabetes.[38]



More homes, smaller households and dispersed families

The number of households in England is projected to increase to 28 million in 2039 from 22.7 million in 2014 – with an average growth equivalent to 210,000 per year.[40] Average household size is expected to fall. Larger households use less energy on a per person basis[41] but families are becoming increasingly dispersed with more people living alone and without immediate support.



More disabled younger people

It is widely anticipated that the proportion of children and young people who are disabled will increase. It is estimated that there will be over 1.25 million children with a disability by 2029. The reasons include improved diagnosis, reduced stigma in reporting disability, and better survival rates for pre-term infants.[39]



Financial uncertainty and poverty

Modest economic growth is anticipated over the next five years (OBR, IFS). But Brexit has exacerbated uncertainties. Average growth of Gross Domestic Product (GDP) per capita of 1.7% per year,[42] but the shortfall between private rents and housing benefit could put 1 million households at risk of homelessness by 2020.[43] Household debt as a proportion of income is forecast to rise between 2015 and 2021,[44] potentially putting further pressure on household finances.

[34] The Age UK almanac of disease profiles in later life: a reference on the frequency of major diseases, conditions and syndromes affecting older people in England, Age UK, 2015.
[35] Anderson et al., Electricity consumption and household characteristics: Implications for census-taking in a smartmetered future, Computers, Environment and Urban Systems, 2016.
[36] National Energy Efficiency Data-Framework Report, DECC, Annex C., 30 June 2016.
[37] Vulnerable Customers in Regulated Industries, NAO, 31 March 2017.
[38] Disability in the United Kingdom 2016: facts and figures, Papworth Trust, 2016.
[39] Ibid.
[40] The impact of population change and demography on future infrastructure demand, NIC, 22 December 2016.
[41] National Energy Efficiency Data-Framework Report, Annex C. DECC, 30 June 2016.
[42] Fiscal Sustainability Report, Office of Budgetary Responsibility, January 2017.
[43] Shut out; Households put at risk of homelessness by the housing benefit freeze, Shelter, June 2017.
[44] Vulnerable Customers in Regulated Industries, NAO, 31 March 2017.



More private renters

An additional 1.8 million households are projected to become private renters by 2025 in England and Wales. Almost 1 in 4 UK households and more than half of 20–39-year-olds will be renting privately.[45] There will be more private renters than people in social housing, with potentially shorter leases, less space and more difficult to install energy efficiency measures. In addition, they will be potentially more transient, harder to engage with and have less control over purchases which impact the infrastructure of the home.



Inequality

More than 40% of UK wealth is owned by just 10% of households, and the UK's energy market is characterised by very uneven levels of understanding and participation among different demographic groups.[46] If new energy technologies can only be accessed with upfront investment, and the most price competitive tariffs are more complex to understand, benefits are likely to be distributed unevenly across the population. Similarly, the decarbonisation of heat could also have significant impacts on equality depending on the approach and where costs fall.[47]



For more information see: Sustainability First's 'Tomorrow's World' briefing.[48]

Unarticulated need

Improvements in energy customers' experience and their wider quality of life, can no doubt have benefits for society as a whole and sectors beyond energy. For example, the NAO reports that the problems faced by vulnerable consumers in regulated markets can also potentially knock-on to increase their reliance on public services such as benefits or care[49]. There is relatively little publicly available data on the impact of this on the public purse or quantified data held by regulators or industry on the impact of the problems faced by energy customers with additional needs in the energy sector. This is an area that needs further work.

As well as the important fairness concerns around ensuring access to energy benefits and safety for all consumers today and in a future world, for competitive companies who get their approach right, customers with additional needs could potentially be a market opportunity. For example, together, disabled people have an estimated spending power of £249 billion a year[50] while the value of the grey pound as a proportion of UK spending is increasing. While the precise commercial opportunities for energy companies in this market are unclear, with potential convergence of utility with new retail markets (insurance, banking etc.), it is a particularly important factor for consideration.

[45] UK Housing Market Outlook: The Continuing Rise of Generation Rent, PwC, July 2015.
[46] The disrupted decade: 4 disruptions that will shake things up for energy consumers, Citizens Advice, 29 November 2016.
[47] Heat Decarbonisation: Potential impacts on social equity and fuel poverty, NEA, September 2017.
[48] Tomorrow's World for Energy and Water briefing paper, Sustainability First, 18 July 2017.
[49] Vulnerable Customers in Regulated Industries, National Audit Office, 31 March 2017
[50] http://www.bbc.co.uk/news/av/business-39040760/the-power-of-the-purple-pound-explained

3 Methodology

Research overview

There were five main research phases to this Project:

1. Initial scoping - desk research and online survey
2. Stakeholder interviews
3. Case study identification
4. Case study categorisation and shortlisting
5. Independent case study judging

Each phase was reviewed and challenged by the Inspire Project Group, drawing on their diverse experience and perspectives from across energy networks, suppliers, government, regulation, product manufacture and consumer arenas.

1. Desk research and online survey

To explore the landscape Sustainability First carried out desk research to:

- Understand the relevant context
- Identify potential key opinion formers in this area, with divergent views to interview for our stakeholder interviews.

This included reviewing a range of government, parliamentary, consumer, industry, innovation agency and regulatory publications (policy, news, research) in addition to a selection of relevant academic research.

We also conducted an online survey. This was sent to around 50 recipients including some identified as part of the desk review. It included a combination of consumer groups, disability organisations, companies and their industry associations, a number of regulators and a handful of academics working in the vulnerability space. This included organisations and other individuals working in utilities other than energy. Its purpose was to scope high-level views on:

- How innovative the energy industry is in supporting customers in vulnerable situations;
- How effective energy networks and suppliers are at supporting customers in vulnerable situations;
- To identify examples of innovative products, services, approaches that could benefit customers in vulnerable situations
- To understand respondents future projections for customers with additional needs. From this, and the desk review, we also identified individuals to interview.

The online survey questions are outlined in Appendix 2.

2. Stakeholder interviews

We conducted a total of 52 semi-structured interviews (each lasting between 45 minutes and three hours) with around 70 people. In addition we had a number of phone discussions on aspects of the report to sense-check emerging assumptions. The 52[51] interviews included:

- 14 energy companies and their industry bodies
- 13 consumer and disability organisation related interviews
- 7 service/product manufacturers and their industry associations
- 7 government and regulator voices
- 9 others (academics, communications professionals, consultants, an NHS Trust)

Our thanks go to all those that participated in this research. A list of interviewees is in Appendix 3 and a copy of the Project Inspire semi-structured Interview questions is in Appendix 4.

[51] The number in this list doesn't add up to 52 as with some organisations such as Citizens Advice and Ofgem we did a number of interviews to ensure a spread of views from different teams.

All of the interviews were anonymised, with views not attributed to either the individuals or the company. This was to encourage frank and open discussion. The quotes cited in this report are not therefore attributed unless from alternative sources in the public domain.

The interviews covered a range of areas to varying degrees depending on the organisation being interviewed and the stage of the research. These included among other areas:

- Views on how innovative energy suppliers and networks are
- Barriers and enablers to vulnerability innovation – including individuals' personal experiences of having tried to innovate/bring ideas to delivery and the wider regulatory and political environment
- Their views on the value of awards, league tables, review sites in driving innovation
- Company structures and processes to support customers in vulnerable situations
- Perspectives on inclusive design
- Views on accreditation
- Views on the benefits and dis-benefits of innovating to support customers with additional needs
- The extent to which companies identify and can/do share learning which can benefit vulnerable customers
- Views on future opportunities and risks for vulnerable customers
- Views on the smart meter rollout and wider technological and social change in relation to vulnerable customers
- Recommendations for improvements

The views shared during these interviews and the wider research form the basis of the findings in Sections 6 and 8.

3. Case study identification

Our aim was to identify innovative practice in supporting and empowering customers in vulnerable situations. In particular we decided to focus on the main areas of vulnerability regulation:

- Identifying vulnerability (ID)
- Affordability - supporting customers on low incomes and in debt (AF)
- Ensuring safety and peace of mind (S)
- Ensuring equal access (AC)

As noted, we were aware of the need for company improvements in some of these areas. In addition we sought to identify examples of how smart metering, and smart technologies are being used to support customers in vulnerable situations. We actively sought to identify 'quick wins', ideas that companies could easily implement alongside more substantive projects. Innovations did not have to be vulnerability specific, but they had to deliver benefit over and above standard practice for customers with additional needs.

We decided to look not just within the GB energy market, but across other sectors in GB (such as water, telecoms, retail and financial services), and internationally. We identified potential case studies in a range of ways. Via:

- Desk research e.g. reviewing existing awards and rewards and company services online.
- An online survey
- Contacting a selection of international regulators, consumer groups and industry bodies
- Via existing utility and energy networks e.g. EUK, BEAMA, Eurelectric, water Consumer Challenge Group chairs and the Communications Consumer Forum.
- Events and word of mouth



In total we identified more than 100 potential case studies. Some case studies were submitted by companies, others we encouraged companies to put forward having researched or heard about their approaches.

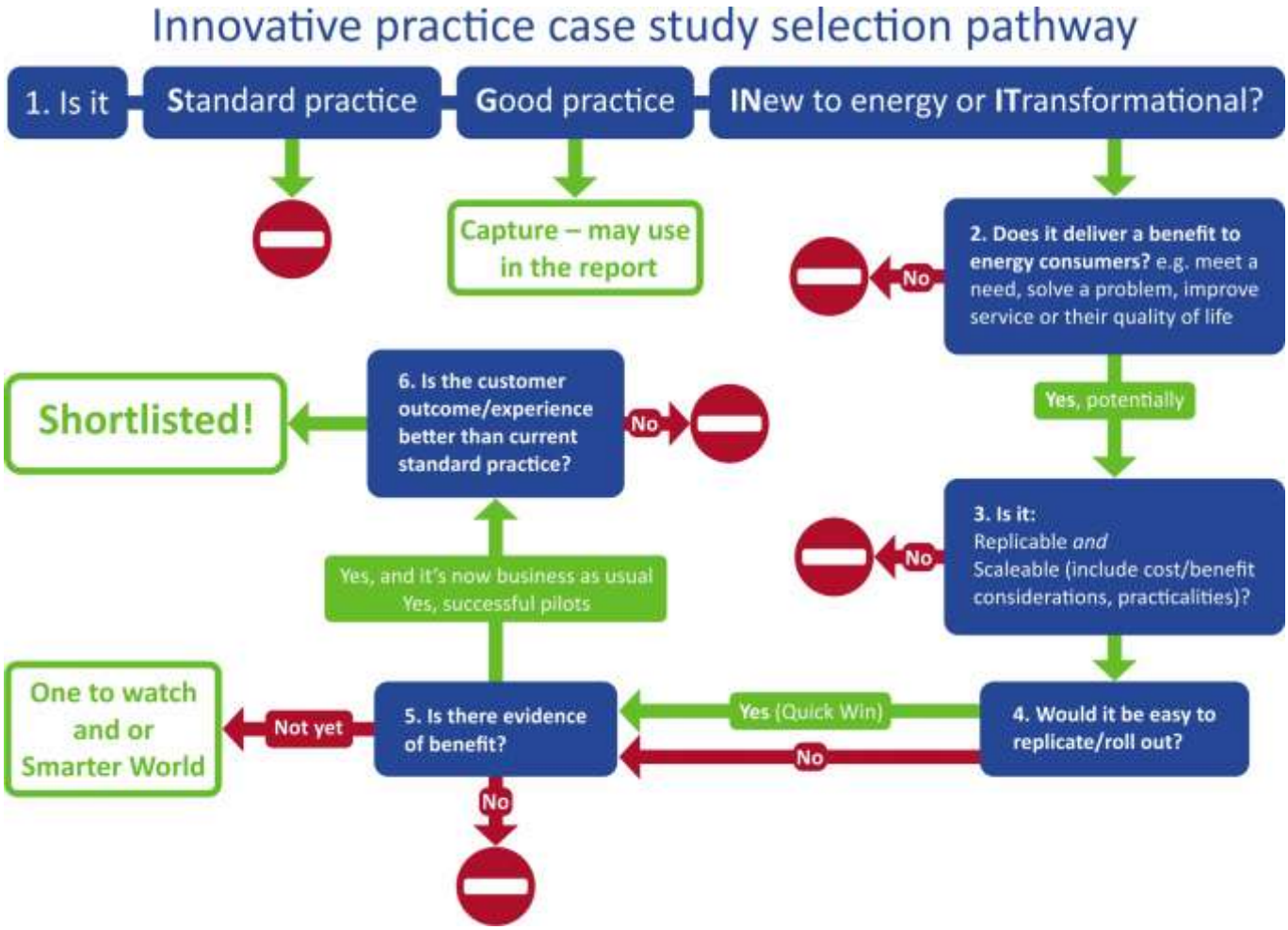
4. Case study categorisation and shortlisting

By carrying out further research we then sought to categorise the identified case studies in the following way:

- **Standard practice** – For each of the four areas outlined (categories ID, AC, AF, S) above we started with setting our benchmark for what is commonly understood to be 'standard practice' in that area in the energy sector. Standard practice can still be effective practice.
- **Good practice** – This was defined as an approach that delivers benefits over and above industry standard practice for customers in vulnerable situations but was used by at least two companies.
- **Innovative practice** – An approach was defined as 'Innovative' if it delivered benefits over and above industry standard practice and was not, *as far as we were aware*, used by any GB supplier or network for the purpose outlined.
- **Transformational –** These were innovations that we were not aware of being used anywhere.
- **'Ones to watch' case studies** – Interesting innovations under development and/or without impact data attached to them.
- **Quick wins** – innovative approaches that could be implemented easily by utilities with relatively little resource.

We sought to create a short-list of the innovative case studies. To be short-listed the innovation had to be:

- **Measurable**
- **Replicable/scalable** so other energy companies could do or use the approach.
- **Potentially cost-effective** relative to the benefits or alternatives.
- **Better than** understood industry standard practice to support customers in vulnerable situations. This included providing greater choice.



At the end of this process we had a final short-list of 17 case studies.

Please note!

When shortlisting we consciously decided to:

- Explicitly not compare the scale/depth of impact of different innovations – there are pros and cons to this.
- Include older as well as new innovations if they are still innovative, especially if there is evidence of consolidation and extension since they were first launched. We believe it is important that innovations are not 'flash in the pan' ideas.
- Include seemingly 'boring but important innovations' – some approaches were not 'sparkly' or 'rocket science' but are still really valuable to customers with additional needs.
- Include an innovation if the company were the first to do it. To give credit where credit is due for those first to develop an idea.

We had a significant number of case studies where we were unable to establish if they were effective as either the data was unavailable at the time of judging, or the company did not provide it. They may have got shortlisted had the data been available in time. We have included many of these in this report as 'ones to watch' and do not take a view on their effectiveness.

5. Independent judging

To ensure an independent evaluation of the case studies and to share and inform our learning, on 27 April 2017 we hosted an **Energy for All – Innovation Day** in London. The final short-list of 17 innovations were entered into one of four categories below and judged in a 'Dragons Den' style event by an independent panel of ten consumer and disability experts. The categories were:

- Identifying vulnerability
- Improving access
- Affordability – supporting customers on low incomes and in debt
- Safety and peace of mind

The judges came from Action on Hearing Loss, Age UK, British Red Cross, Citizens Advice, Mencap National Energy Action, National Right to Fuel Campaign, RNIB, Scope, StepChange. We also used this day to check the proposed categorisations of our case studies. See Appendix 6.

The judges were given Guidance on how to assess the submissions (see Appendix 6) but were also encouraged to draw from their own perspectives and approach. 'Innovators' were given 10 minutes to present their ideas and then faced questioning from four or five judges with expertise in the category area. In addition, the audience including industry and regulators was also able to contribute to the debate and indicate their thoughts on the innovations.

The independent judges then scored the innovations and the 'innovators' were awarded Gold, Silver and Bronze Awards accordingly. These 'winning' case studies are included as in-depth case studies or 'Deep Dives' in this report.

Our thanks go to all the judges (see Appendix 5) and participants on the day who made this a great learning event for all[52]. More information on the innovation event and approach including feedback from the judges and audience on each of the innovations, can be found at http://www.sustainabilityfirst.org.uk/index.php/inspire

Embedding vulnerability case studies

Throughout the case study shortlisting process we also identified a number of examples of how companies had taken innovative and good practice steps to 'embed vulnerability' and inclusive approaches into their day to day operations. With these kinds of approaches it was often hard to directly demonstrate the consumer impact but given their value we have captured these case studies in this report in Section 7.

[52] Stakeholder feedback from the innovation day - https://www.youtube.com/watch?v=faOsGKUISM8



Challenges and lessons learned

In practice we encountered a number of challenges in developing and assessing the case studies:

- Companies don't always want to share genuinely innovative approaches due to concerns about intellectual property and competitive advantage.
- Companies don't always know they are doing something innovative.
- Some didn't want their innovation associated with 'a vulnerability project' – feeling rightly or wrongly it could negatively impact the mainstream appeal of their product.
- Some suppliers did not feel they could explicitly acknowledge or share innovation projects funded by fines money.
- Importantly, the majority of projects lacked robust evidence on customer impact and cost efficiency. Very few had also evaluated the impact to the business and/or wider public interest.
- Many companies fell short in communicating the benefits of their innovations to customers and society, with many descriptions focused on technical considerations.

Case study health warnings!

- Importantly, there was not always agreement on what *was* deemed to be 'good' practice and effective innovation. Even some of our award-winning innovations split the judging panel/room.
- The innovation and good practice benefits are as reported by the company or organisation that developed them. Not all have been independently verified though many have.
- There is no easy way to directly compare and rate innovations. In addition to the high-level criteria, we offered assessment guidance to our judges but there is a degree of subjectivity.
- While the four judging categories above (ID, AC, AF, S) were used for practical reasons, it should be noted that a number of the winning innovations could have been entered into multiple categories as they delivered multiple benefits. This no doubt influenced the awards made.
- It should be noted that it is hard to establish if an approach is genuinely innovative. Inspire's Project Group helped with checking the categorisations. We also checked categorisations before publication with attendees at our Energy for All Innovation event (see below). However we cannot be absolutely certain that a case study is not used by more than one energy company in GB. In addition, some initiatives, which were 'innovative' when we started the Project have since changed categorisation, e.g. SSE was the only energy company to have SignVideo at the beginning of the Project but British Gas and Western Power Distribution are now offering similar services (the latter offer Interpreter Now due to Project Inspire). This is good news for consumers as innovation has been shared, but there may consequently be a few anomalies which are likely to increase as the Project delivers its aims.
- This report showcases just a small number of the potential innovations, which could improve service delivery and quality of life for energy customers in vulnerable situations. We are mindful that there are some potentially very effective approaches that did not make the cut because of lack of available information, time constraints or our awareness of them.

Types of case study

We have included three types of case study in this report:

- **Deep Dives** – are award-winning in-depth case studies showing innovative practice which have met our outcomes criteria.
- **Snapshots –** are short summaries of good practice and interesting ideas, which we hope will stimulate improvements in service and further exploration of approaches. It should be noted that we have not independently validated the effectiveness of all of these approaches and some do not have impact data. We are not therefore endorsing these approaches specifically but sharing these initiatives to stimulate ideas given their potential to benefit customers in vulnerable situations.
- **Ones to watch –** are potentially beneficial concepts/technologies/approaches under development or being piloted that at the time of writing didn't yet have measurable outcomes or robust data attached to them.
- **Quick wins –** are innovative approaches that could be implemented easily by utilities with relatively little resource.



A full list of case studies and a case study key are in Appendix 1.

4 The regulatory framework for innovation and consumer vulnerability

Context

There is a clear and rising expectation, from government and Ofgem, that GB energy suppliers and networks all have an important role to play in tackling issues relevant to customers in vulnerable situations.

Ofgem's Consumer Vulnerability Strategy (2013)[53] and subsequent Progress Report (2015)[54] outline the regulator's approach to defining vulnerability. The Strategy makes clear Ofgem's expectation that suppliers, distribution companies and related third party intermediaries, should incorporate consumer vulnerability considerations into the design and delivery of their products and services.

Reflecting this, energy suppliers and gas and electricity networks must comply with a number of 'vulnerability specific' licence conditions as well as their wider legal duties, including the Equality Act 2010. These requirements are in addition to general consumer protection rules and regulation, which benefit all consumers.

The number and type of 'vulnerability obligations' on the suppliers and networks respectively, varies, reflecting in part the companies' different roles and relationship with consumers.

The Priority Services Register (suppliers and networks)

One key element of the protections that covers both suppliers and networks is the concept of the Priority Services Register. Suppliers and electricity distribution networks have historically had obligations to maintain registers of vulnerable customers and to provide them with additional support, particularly focused around communication, access and safety needs. More recently this obligation has been updated to broaden the definition of vulnerability, to improve sharing of information between different market players and to make some of the additional support more outcomes based. Gas distribution networks now also have an obligation to have processes for identifying vulnerable customers although some of the practicalities around implementation are still being worked through.

Supplier obligations

Suppliers have the main contact with customers and hence historically there have been a range of supply licence conditions which address that inter-face: marketing; alternative payment methods (eg a requirement to accept cash) ; pre-payment meters (eg limiting their installation to where it is "safe and practical" for the customer); as well as debt and disconnection. There are for example restrictions on disconnection of certain groups of vulnerable customers during winter months and obligations on suppliers to take account of ability to pay in setting debt repayment levels. More recently obligations have been introduced to ensure that vulnerable customers are able to benefit fully from the smart meter rollout and requiring suppliers to provide additional support as necessary.

[53] Consumer Vulnerability Strategy, Ofgem, July 2013
[54] Consumer Vulnerability Strategy Progress Report 22nd September 2015

In recent years Ofgem has started to move to more principles based-regulation (PBR) - and away from prescriptive supply licence conditions, which specify how companies should identify and help vulnerable customers. PBR focuses on the outcome that must be delivered rather than specifying how this might be achieved and is reflected currently in broad "Standards of Conduct" which will be added to over time. PBR is intended to encourage greater innovation in how companies identify and support customers with additional needs, enabling more flexible approaches in a fast changing energy market.

As part of reinforcing this approach Ofgem is introducing a broad principle to the domestic Standards of Conduct that requires suppliers to help consumers make informed choices about their energy supply. This would supplement five narrower principles introduced into Standard Licence Condition (SLC) 25, which require suppliers to enable domestic customers to make informed tariff choices. This new enforceable vulnerability principle is a key part of the regulator's consumer-focused reforms to the domestic Standards of Conduct. This new regulatory framework makes it very clear to all suppliers that they must put consumers, including those in vulnerable situations, at the heart of everything they do from the very beginning.

Ofgem has made clear that in moving to PBR, and in lifting some of the more prescriptive requirements, it is not withdrawing from regulation. Part of its approach will involve increased market monitoring. Ofgem has highlighted that PBR is more flexible to cope with an evolving market.

As part of its ongoing role Ofgem monitors and takes enforcement action where companies are in breach of their obligations and can impose significant financial penalties. Over recent years it has become common practice for Ofgem to accept settlement arrangements where companies typically direct sizeable sums to support vulnerable customers in lieu of a penalty. This money has provided the funding for a number of innovative projects.

Finally, suppliers also have to deliver a number of government programmes. Energy suppliers with more than 250,000 domestic customers (gas and electricity) must offer the Government's Energy Company Obligation (ECO) aimed at improving energy efficiency, particularly targeted at those in fuel poverty, and also the Warm Home Discount (WHD) programme which provides bill discounts for certain low-income groups[55].

Network company incentives

In contrast to the suppliers, the network companies have far less frequent interaction with customers but where they do the impacts can be much more critical as this tends to be linked to planned or unplanned supply interruptions or other emergency situations.

The networks Priority Service Register (PSR) obligations include how they deal with such interruptions (such as the obligation on gas networks to provide alternative heating and cooking facilities to vulnerable customers during gas interruptions).

In addition, the networks have a number of incentives in their price controls which are aimed at encouraging a more outcomes-based approach to their treatment of vulnerable customers. While Ofgem has been clear that the networks should focus on activities that are linked to their core role as a network provider, the aim is to encourage them to think broadly about that role.

Under the RIIO GD1 and ED1 [56] price control arrangements:

- When submitting their business plans as part of setting the price control, the companies are expected to engage with their stakeholders to identify their priorities. The network companies generally engage representatives of vulnerable consumers as a part of this process, which can lead to commitments to particular outcomes in support

[55] As noted, these schemes make a major contribution to the service received by vulnerable energy customers, but are not the focus of this paper.

[56] RIIO Stands for Revenue based on Incentives for Innovation and Outcomes. Under the RIIO price control the revenues that the monopoly networks can earn are capped but with incentives, in terms of additional revenue allowances, where they deliver particular outcomes – or in some cases penalties where they fail to deliver.

of vulnerable customers. Ofgem has the ability to "fast track" companies that have well justified business plans, informed by effective dialogue with stakeholders. Avoiding a prolonged price-control negotiation, plus a specific additional revenue allowance for fast-tracking provided the networks with an incentive to engage with their consumers and stakeholders on vulnerabilty.

- On an ongoing basis the networks can earn additional revenue through specific incentive schemes which vary slightly between gas and electricity but in effect are aimed at encouraging the networks to focus on the needs of vulnerable customers, with the level of reward being determined by a panel of independent consumer / stakeholder experts. **In electricity,** the annual Stakeholder and Consumer Vulnerability Incentive includes a specific element for initiatives supporting vulnerable customers. **In gas**, the Stakeholder Incentive performs a similar role (albeit without such an explicit vulnerable customer focus) and in addition in gas there is a less frequent Discretionary Reward Scheme which can be used to target specific social or environmental issues (such as raising awareness of the dangers of carbon monoxide poisoning);
- The Gas Distribution Networks (GDNs) also have to deliver the Fuel Poverty Network Extension Scheme (FPNES) with targets for the number of additional connections to be delivered in deprived areas over the price control, recognizing that gas is a more affordable heating solution for most customers.

In addition to these specific regulatory requirements / incentives around vulnerability there is also a strong incentive on network companies to innovate in support of the transition to a low carbon future. In particular there is specific additional funding available each year through Network Innovation Competitions and Network Innovation Allowances. In some cases the companies have used this funding to explore ways in which wider network innovations could benefit vulnerable customers. However more could be done to encourage the networks to consider whether there are potential vulnerable customer benefits when submitting their bids under this scheme.

Summary: the main areas of energy company vulnerability regulation



In general regulation to protect vulnerable energy customers focuses on four main areas, which have been used as a framework for organising our innovation case studies:

1. *Identifying vulnerability* – obligations and expectations on companies to take proactive action to identify and share (with the customer's consent) information on their additional needs.
2. *Equal access* – safeguards to ensure customers are not be at a disadvantage due to their personal characteristics or situation.
3. *Affordability* – protections and incentives to support customers on low incomes, including those in fuel poverty and in debt.
4. *Safety and peace of mind* – obligations and incentives to ensure customers have equal safety outcomes, and are protected from risks such as carbon monoxide poisoning and being off-supply.

Reputational regulation (suppliers and networks)

In addition to formal regulation, Ofgem can use reputational regulation to support better outcomes for customers with additional needs. On the supply side, Ofgem announces its investigations and enforcement action – so in this sense poor performers are 'shamed'. The regulator also publishes an annual monitoring report on the company social obligations. It has also published the conclusions from its Challenge Panel on Standards of Conduct. In the latter, the regulator highlights examples of **good practice** (naming the companies concerned) and areas where industry overall could do more. On the network-side, with the vulnerability incentives, the money awarded to each company for social outputs are published – in effect creating a league table - with some examples of good practice cited. Given the relatively small sums of money available through some of the network incentives, the reputational driver is also material.

Reputational regulation is an effective tool where the regulator cannot be prescriptive. It is an important adjunct to principles-based regulation or outcomes-based incentives - as it helps establish and benchmark what is good practice and can encourage innovation.

Given the political and wider stakeholder interests in how companies are dealing with their vulnerable customers this sort of reporting is of particular value.

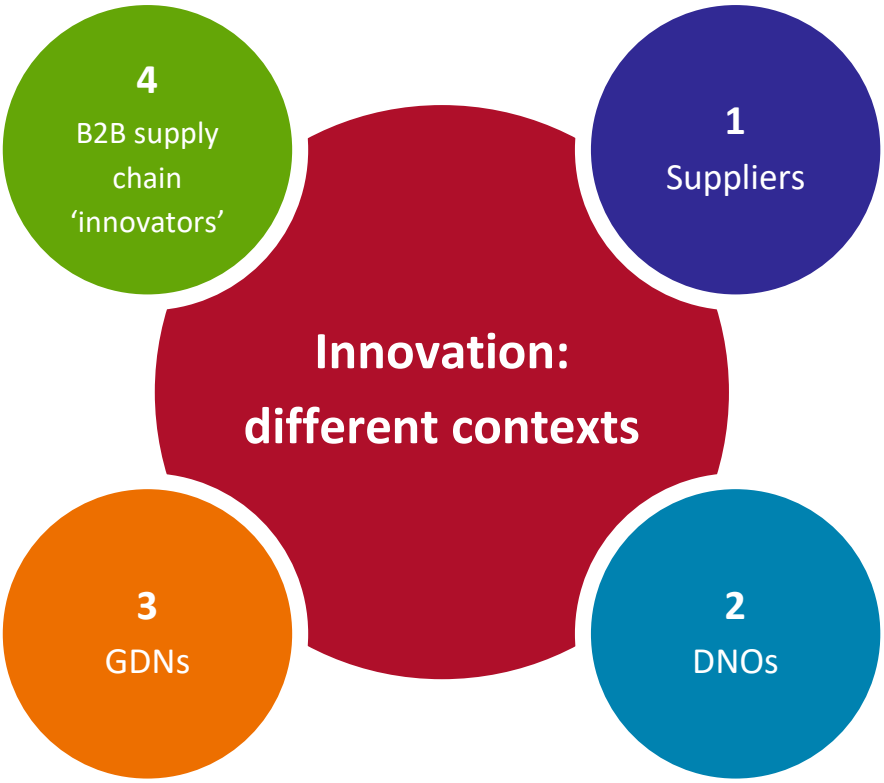
The different contexts of innovation

In our detailed interviews we explored barriers and enablers to innovation with representatives of three main actors in the energy sector. These interviews drew from a *selection* of:

- **Energy suppliers** – including different sized, established and newer companies
- **Network companies** – gas distribution networks (GDNs) and electricity distribution network operators (DNOs)
- **Supply chain innovators** e.g. product manufacturers, service providers.

As highlighted these companies all operate in different regulatory contexts. These are summarised overleaf. Many of the regulatory assumptions are set out in Ofgem's Regulatory Stances[57].

[57] Ofgem's Regulatory Stances, Ofgem, December 2016





In theory competition drives innovation which benefits all. Suppliers develop new products and services to maintain and grow market share. Customers can switch away if dissatisfied.

In practice many vulnerable customers are 'sticky' and can face barriers to switching. It is unclear if companies want to attract customers with additional needs, given their perceived or actual market value. There is little way to compare service that may matter to customers with additional needs and for socially minded switchers hard to compare suppliers in this regard.

Focus of policy in relation to vulnerability is historically on: prescribed minimum standards (SLCs); voluntary codes; and 'obligations'. There are no supplier vulnerability innovation incentives. However, Ofgem's focus on outcomes based regulation is intended to encourage greater innovation.

Some new market entrants are targeting traditionally 'vulnerable segments' e.g. Utilita. Others such as Bristol Energy have explicit social aims. Redress monies also support vulnerability projects. All companies need to offer appropriate levels of service given the propensity for all customers to have additional needs.



Networks are not subject to the same competitive pressures as suppliers. Their contact with customers in vulnerable situations tends to be less frequent but in more 'intense' situations when things go wrong. GDNs have a greater focus on fuel poverty and safety.

The role of regulation is seen to incentivise innovation so as to compensate for the lack of market or 'to correct negative externalities'. Money is discretionary, with awards made post innovation rollout if companies meet different criteria. Minimum standards are in place to ensure protections.



There are innovation competitions with up front funding available but little to specifically to support energy customers with additional needs. In practice relatively few projects submitted to competitions have any kind of direct consumer vulnerability goal.

The design of interventions impacts the level, speed and nature of innovation. It can also dis-incentivise innovation.



In theory competition drives innovation as the best products and services are selected by businesses to meet market need and demand (including that of customers in vulnerable situations).

Companies may also have to meet minimum standards.
E.g for product safety, accessibility.

In practice, often B2B innovators must respond to the companies they serve 'wants' which can be quite prescriptive, focused on cheapest cost options or fail to consider the needs of vulnerable customers. This can limit innovation.

Small companies in particular can find it risky to lead pilot projects that demonstrate the value of more creative ideas to support customers with additional needs.

5 Guides to standard, good and innovative practice

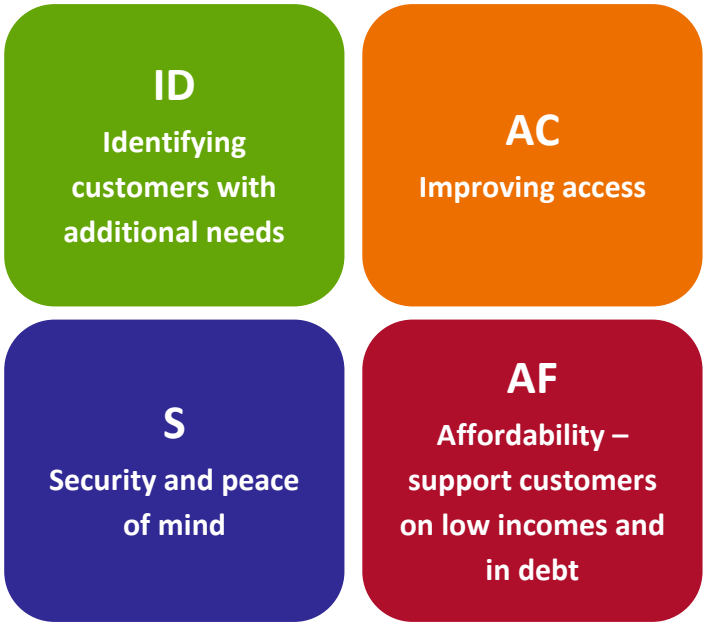
Case study key

In line with the four key area of vulnerability regulation there are four practical guides in this section:

Each guide includes:

- **A short introduction on why action is needed and/or the relevant regulation/policy context**
- **Standard industry practice in that area**
- **Case studies illustrating good and innovative practice.**

Many innovation case studies could be in multiple guides so we have categorised them accordingly - **ID, AC, AF, S** to highlight their multiple benefits.



Transformational - this is an innovation which we are not aware of being used in any sector to support vulnerable customers. These are often completely new ideas. **IT**

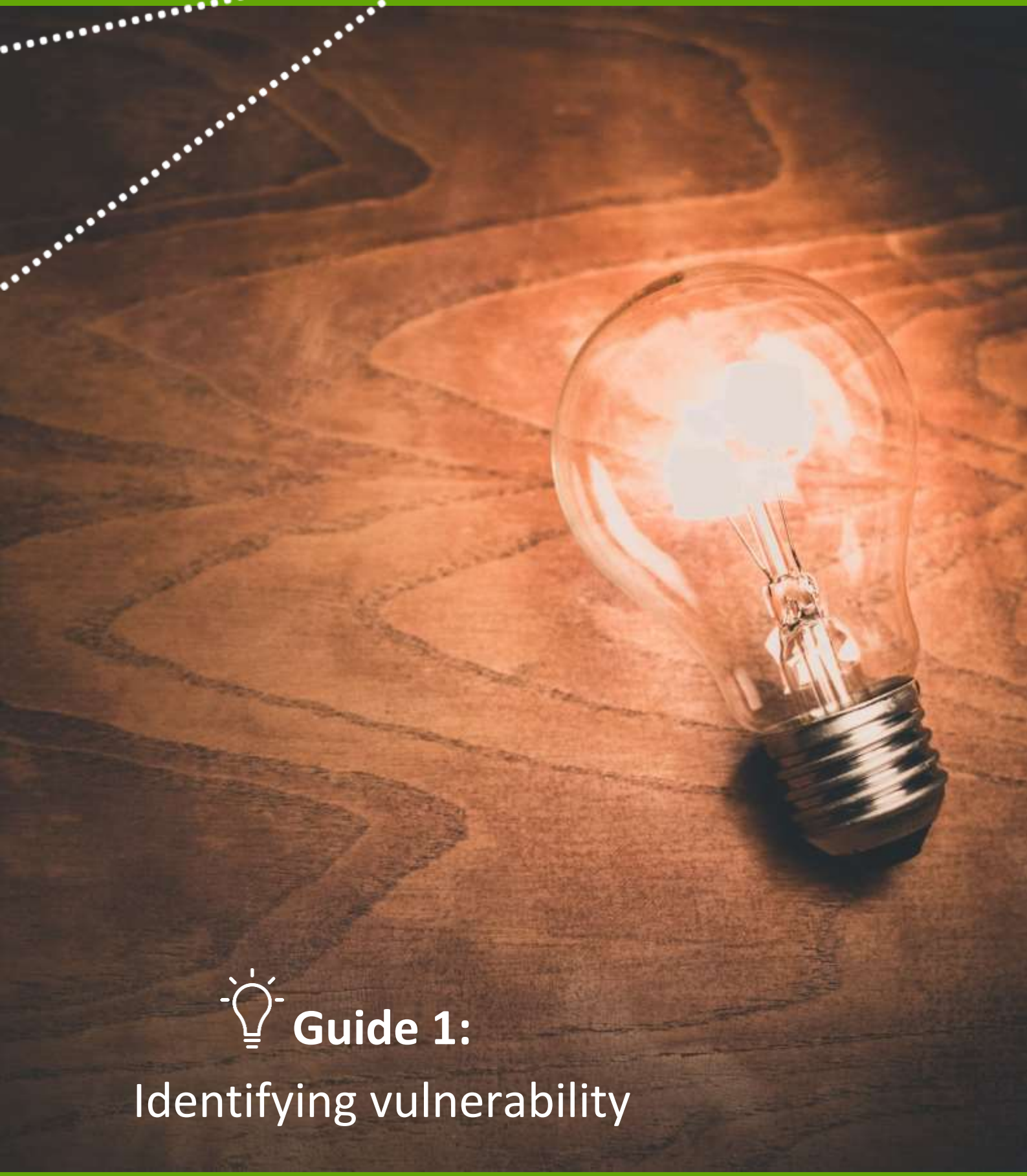
Innovative practice - approaches which deliver benefits over and above industry standard practice and are not, as far as we are aware at the time of assessment, used by any GB supplier or network for the purpose outlined. **IN**

Good Practice - an approach that delivers benefits over and above industry standard practice for customers in vulnerable situations but was used by at least two companies so isn't therefore innovative. **G**

Standard Practice - this is what we commonly understand to be 'standard practice' in a given area in the energy sector. Standard practice is used by a large number of energy companies. It is also often effective practice. These innovations are now business as usual. **SP**

Quick Wins - innovative approaches that could be implemented easily by utilities with relatively little resource investment. **QW**

One to watch - interesting innovations under development without impact data attached to them. **W**



Guide 1:

Identifying vulnerability

Guide 1: Identifying vulnerability

Regulatory context and need

It is important that companies identify and understand customers' additional needs so they can provide appropriate service and support in a timely way, including during emergencies.

Under the **Priority Services Register licence conditions**, energy suppliers, electricity networks and more recently gas networks have obligations to identify vulnerable customers, maintain a register of those people with additional needs and to share information about vulnerability where they have customers' consent[58].

Ofgem's new **Vulnerability Principle** also makes clear that as part of the existing obligation to treat all customers fairly, suppliers are expected to have better and more consistent ways of identifying vulnerability and should be able to respond to customers in a way that reflects their individual circumstances, needs and interests[59].

There is also a strong policy focus on **cross-sector and cross-organisation** collaboration to help identify vulnerability. The sharing of data across different organisations is expected to result in a better quality data and improve the customer experience. This includes by limiting the need for customers to have the same, potentially stressful conversations regarding their circumstances with different providers and by providing a more streamlined customer service.

The UK Regulators Network has set out its expectation that cross-sector companies should share vulnerability data and insight in its *Making better use of data: identifying customers in vulnerable situations* report Oct 2017. Companies will need to report on progress in spring 2018. Initiatives are underway, including between water and energy companies.

Ofgem has challenged companies to make better use of vulnerability data as part of its Priority Services Register reforms. Energy network operators, suppliers and other bodies have developed common vulnerability needs codes to facilitate this.

The National Audit Office's April 2017 report *Vulnerable consumers in regulated industries* called for regulators, government and companies to "enhance data-sharing that would allow better identification and support for, consumers in long-term or permanent vulnerable circumstances."

The Digital Economy Act 2017 enables more sharing of information about customers' vulnerabilities between public agencies and water, gas and electricity companies, in particular to identify customers living in fuel poverty.

[58] Energy Supply Licence Conditions - https://www.ofgem.gov.uk/licences-codes-and-standards/licences/licence-conditions

[59] Standards of conduct for suppliers in the retail energy market, Ofgem, 30 January 2017

Challenges

There have long been calls for companies to better identify customers in vulnerable situations. Identifying vulnerability and keeping records up to date can be challenging:

- Customers' needs may change over time e.g. with pregnancy, bereavement, ill-health.
- Customers, carers and advice agencies often don't know support is available so don't recognise the need to share their vulnerabilities[60].
- Customers may also be reluctant to identify their particular needs or not see themselves as vulnerable[61] .
- Customers' willingness to share information about their circumstances may be lower than it could be be due to lack of trust in energy companies, and fears about what the data will be used for[62].
- Some groups of customers e.g. those on prepayment meters or in private rented accommodation, may also have less contact with their energy supplier and be more transient, making raising awareness of help available more challenging.

Data privacy and access protections

When identifying and recording customers' additional needs companies must also put in place processes to comply with data privacy regulations. Notably, the Data Protection Act 1998[63], and from May 2018 the General Data Protection Regulation (GDPR)[64]. The latter provides enhanced protections including greater control and portability of their data. The UKRN has also outlined three principles for energy and water utilities, which are in line with the GDPR[65]:

- **Transparency** – Customers should always understand how their data is used, why it is being collected and with whom, if anyone, it is being shared.
- **Access** – Data held on customers should be presented in a clear, understandable and accessible way.
- **Control** – Customers should be able to update their personal information, amend sharing preferences and delete information they no longer want on record.

In addition, energy companies must also comply with the Smart Metering Data Access and Privacy Framework[66] and the Smart Energy Code, the latter in order to access smart data via the Data Communications Company (DCC)[67].

[60] Ofgem consumer research showed that only 24% of consumers are aware of any non-financial support provided by energy customers in vulnerable situations. Decision to modify gas and electricity supply, electricity distribution and gas transporter licenses for PSR arrangements, Ofgem, 25 October 2016

[61] Providing fair, flexible and inclusive services- business perspective, BSI, March 2011

[62] Better use of data and information sharing to identify customers in vulnerable situations- project update, UKRN, August 2017

[63] https://www.gov.uk/data-protection

[64] Guide to the General Data Protection Regulation (GDPR), ICO, live document

[65] Making better use of data: identifying customers in vulnerable situations, UKRN, October 2017

[66] Smart meter data access and privacy, DECC, 5 April 2012

[67] https://www.smartenergycodecompany.co.uk

Identifying vulnerability - standard practice

Standard energy industry practice in identifying vulnerability includes the following. Not all companies do all of these things but a number do. This is in Sustainability First's view also recommended practice.

- **Self-identification** by the customer, or a carer of a vulnerable customer – companies advertise support available via their communication channels. Some companies have co-branded PSR forms or initiatives.
- **Referral** from a charity, advice or support agency to the company e.g. a debt charity.
- **Data matching** between energy suppliers and the Department for Work and Pensions e.g. to automatically identify eligible customers for the £140 Warm Home Discount core group.
- Operational **staff trained** to use customer touch points (e.g. when field staff visit a person's home or a customer telephones them) **to recognise, identify and record** vulnerability. However, Ofgem has expressed concerns that companies do not currently do enough to identify vulnerability during interactions with their customers.
- Use of **financial and locational data** to understand financial vulnerability e.g. credit scores, payment history, location and property type to take proactive action to help customers in financial difficulty – though sadly this data is not always used to the customer's benefit.
- **Outreach –** some companies have outreach programmes in place to identify customers with additional needs E.g. SGN is working with London Sustainability Exchange to identify and access hard to reach households including certain ethnic groups. This is done via direct engagement with community groups and leaders.

Identifying Vulnerability – The Winning Innovations

- **Gold** Western Power Distribution/CSE's – Who's on our Wires Horizon Scan
- **Silver** E.ON's Care and Assessment Tool (CAST)
- **Silver** Western Power Distribution's Data Cleanse
- **Bronze** SSEN's Interactive Vulnerability Mapping
- **Bronze** Southern Water's Universal Metering

The award-winning innovations outlined below short-listed as part of Project Inspire and voted on by an independent panel of judges at our *Energy for All, Innovate for All* event in April 2017 (see p.24). The judges in this category were:

- Citizens Advice – Jake Beavan
- Mencap - Alexia Karageorghis
- National Energy Action – Danni Crosland
- National Right to Fuel Campaign – Hugh Goulbourne
- Scope – Minesh Patel

Importantly it should be noted that there was not always agreement on what *was* deemed to be good practice and effective innovation. Some of our winning innovations split the judging panel/the wider audience.

Each innovation [at the judging day] addressed a different area of the identification process and pulled together the different ways of finding out who needs help and who needs it the most. When you put it together you have what is possibly the perfect identification process.

Jake Beavan – Citizens Advice



Western Power Distribution:

Who's on our wires Horizon Scan

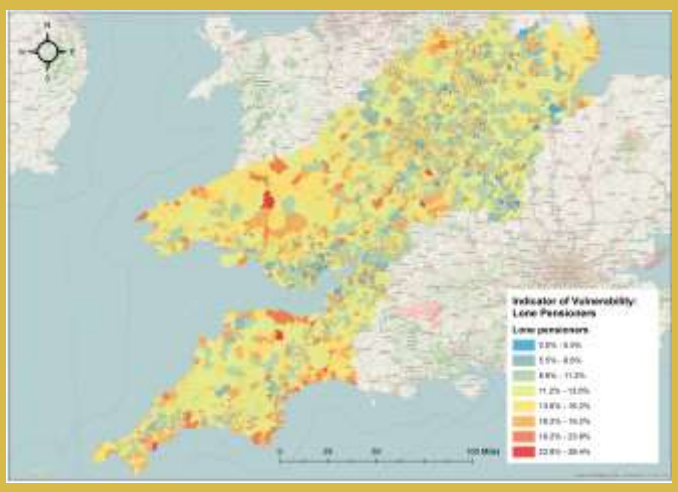
ID AF AC IN

Overview

Western Power Distribution/Centre for Sustainable Energy's social indicator mapping uses 41 different data sets to identify areas of the highest concentrations of vulnerability in its area. Alongside this they systematically map relevant stakeholders/expert partners and fuel poverty schemes to better identify and more effectively and cost efficiently target support at those most in need. This has resulted in them identifying 177 existing fuel poverty schemes and 35 new strategic partners.

The Need

Identifying customers in vulnerable situations, in particular certain hard-to-contact groups, can be challenging. Grass roots organisations that have contact with some of the most vulnerable are often resource constrained and may not be aware of the assistance that available from Western Power Distribution. This approach helps Western Power Distribution to tackle and appropriately target fuel poverty and consumer vulnerability in a cost-effective and strategic way, which works with, rather than duplicates, the activity of existing grass roots organisations.



The Approach

The approach involves social indicator mapping using 41 different data sets to identify areas with highest concentrations of vulnerability in the Western Power Distribution area, using multiple definitions. The company also systematically maps relevant stakeholders and carries out a 'horizon scan' of existing fuel poverty schemes to identify key partnership opportunities and to identify hard to reach groups. The vulnerability mapping includes those who may be eligible for the Priority Services Register and those likely to be finding it difficult to secure an affordably warm home. In 2016/17 the second iteration of data mining drilled down to postcode-level data to update and enhance the company's understanding of the nature and distribution of vulnerable households across its area.

The stakeholder analysis enabled Western Power Distribution to identify 177 existing fuel poverty schemes and expert partners. They surveyed 85 of these groups, including local authorities, public sector and charity organisations, to understand their service provision, impact and resourcing, and also to identify opportunities for Western Power Distribution to support these services rather than duplicate activity in the area.

Western Power Distribution has an extensive set of visual tools detailing the mapping of the proportion of customers in each of the vulnerable situations analysed as well as mapping of PSR eligibility versus existing records. This enables them to identify strategic partners for their work. The social indicator mapping is updated every two years.

Where used: Western Power Distribution
Contact: Alex Wilkes - awilkes@westernpower.co.uk Tel: 07912 098826

Developed by: Western Power Distribution with the Centre for Sustainable Energy (CSE)
Launched: 2015 in East Midlands, West Midlands, South West England and South Wales.
Potential: Any utility company could do this.

Why innovative: Western Power Distribution was the first company to systematically map and overlay both vulnerability and stakeholder mapping to this granularity alongside strategically identifying partners to tackle fuel poverty and vulnerability. This approach moved them away from the then network standard of relying heavily on the supplier as the source of data. Most companies only have a handful of partners and these have emerged organically.

Impact

As a result of the mapping and analysis Western Power Distribution has a network of **35 trusted partners** which has:

- ✓ Helped them reach hard to identify customers in vulnerable situations
- ✓ In 2016/17 it supported a **46% increase in PSR sign-ups**
- ✓ Informed **13 strategically targeted fuel poverty schemes** targeting areas of highest deprivation as indicated by their mapping area. This has supported over **12,000 households to save £2.2 million.**
- ✓ The project is also the foundation for Western Power Distribution's Local Action Fund – a 60k investment in four projects found by inviting the 177 organisations identified in the horizon scan. This helps to build on and support existing grass roots activity.
- ✓ Western Power Distribution shares mapping data with their partners and provides ongoing financial and practical support for their vulnerability work.

> *The extent to which Western Power Distribution works with and contributes to the wider community is exceptional. Significant new evidence this year confirms that support has been further strengthened in terms of the resources, projects and areas reached.*
>
> **Customer Service Excellence Assessor, 2016**

> *A current focus is improving and increasing the referrals network, both in terms of organisations recognising vulnerable customers and identifying them to Western Power Distribution and also referrals out to support organisations. A Local Action Fund has been set aside with bids invited from organisations of which twelve were short-listed and four awarded. These were chosen for novelty of the bid to act as a trail for new initiatives.*
>
> **BSI assessor, 2017**



E.ON:

Care and Assessment Tool



S ID AF AC IT

Overview

E.ON's Care and Assessment Tool (CAST) is an intuitive, easy to use system designed to help customer service advisors to better identify customers with additional needs and tailor support to help them. In addition it can be used to identify weaknesses in staff training and to develop tailored vulnerability products.

The Need

Analysis undertaken by the Customer Safeguarding Working Group (CSWG) - made up of networks and suppliers - found an industry-wide problem of many energy companies having poor quality information on their customers with additional needs. This includes:

- Vulnerable flags not being reviewed for years or at all in some cases.
- Overuse of the 'other' PSR category – this is in part because the number of potential health conditions is complex and it can be hard for advisors to know and understand different vulnerabilities.
- A continued heavy reliance on advisor training to ensure customers are offered the right support.

In addition there is also a broad and sometimes changing array of support available for customers with different additional needs. It can be difficult for all advisors especially newer ones to know all of the support available and who it may or may not be suitable for.

While E.ON customer service advisors used to have conversations with customers about transient vulnerability, the company felt they did not have a robust means to manage this information, keep it up to date or design appropriate customer journeys which meet customers' different needs.

The solution

E.ON's tool has search tags, tailored prompts and questions, and provides social support information.

- The advisor can type in what the customer says (i.e. I struggle to get down to read my meter).
- They are then prompted to ask appropriate questions to understand the customer's conditions/circumstances – this includes carefully worded questions on sensitive issues. This helps to identify and record the right vulnerability and therefore ensure the right support is given.
- CAST then presents advisors with relevant services to discuss with the customer and signposting to wider support. This ensures advisors are aware of the latest assistance available.
- Advisors still undertake training on vulnerability support, but this is an additional way of supporting advisors to ensure advice is up to date.
- The tool has built-in reviews, which prompt advisors to check the customers information is up to date. Review periods are 3 months, 12 months and 24 months. The review period for conditions with a short-term impact is 3 months e.g. short-term illness, awaiting benefits assessment, relationship breakdown. For medium term conditions e.g. customer under 18 years old, pregnancy, mental health conditions, the review is 12 months. Conditions that are likely to be more permanent including pensionable age, serious illnesses and disabilities have a 24-month review.

Where used: E.ON
Contact: Martha Solomon – martha.solomon@eonenergy.com
Tel: 07977 519 349

Developed by: E.ON
Launched: January 2016
Potential: Any utility company could develop this.
Why innovative: No other energy company has this kind of tool.

Impact

- ✓ Helps ensure customers with a diverse range of vulnerabilities are properly identified and recorded. Customers have better-tailored conversations and support as a result. Between 01/01/2016 (CAST rollout commences) and 01/01/2017 E.ON had an increase of just over **50,000** unique customers being added to the PSR for electricity. Gas customers on the PSR stayed pretty static (falling by just over 2k). E.ON were able to remove the 'other' category from selection as no staff reported they still needed it.
- ✓ CAST refreshers are being rolled out across E.ON's residential operation and the Company has seen increases up to 100% on offering services following refresher training.
- ✓ The monitoring, precision and granularity of data collected allows for analysis to understand where front-line advisors need further training and to develop tailored products and services to meet customers' additional needs, e.g. E.ON identified through call monitoring that, whilst services were being offered, advisors weren't always fully recording the services offered. They delivered refresher training to address this.
- ✓ Customers have more seamless conversations with advisors, as it's quicker for advisors to record information and customers are no longer passed between teams. Ensures customers are offered the right services first time so no need to call back repeatedly.
- ✓ Review periods for each condition and circumstance means increased data accuracy. It is difficult to know what actual performance was like pre CAST as E.ON don't have data available.
- ✓ Positive feedback from staff - staff confidence in dealing with customers with additional needs is improved, meaning they are more likely to have important but potentially sensitive conversations. Helps to build trust.
- ✓ Where E.ON signpost the customers to support, they can now follow up with the customer, to ensure that assistance has been taken up.
- ✓ The data supports tailored customer support. E.g.
  - E.ON have a programme of work they are calling Fair Payment Outcomes, which is focused on changing how they support customers in payment difficulty. The data from CAST on the different types of financial vulnerability is helping to inform this project.
  - For their price change in early 2017, they launched a new tariff available only to customers who are on their standard variable tariff and assessed as financially vulnerable by using data on Warm Home Discount recipients which is contained in CAST. This tariff is priced lower than their other available offerings.
  - E.ON's smart metering team uses the data where they are trialling and designing customer journeys for vulnerable customers.



Lessons learned

E.ON have experienced greater challenges than expected in integrating the solution with other systems used by their advisors. They have found that you still need to continually embed and train staff as understanding of vulnerability evolves and to keep a focus on vulnerability.



Western Power Distribution:

Priority Services Data Cleanse



S ID AF AC IN

Overview

Western Power Distribution have created two dedicated PSR data cleanse teams and have committed to contact every vulnerable customer once every two years to update their details and offer resilience and affordability advice and support. In 2016/17 the company contacted over 650,000 vulnerable customers, and successfully updating around 65% of records. This led to estimated financial savings of £1.4m for customers, increased resilience and contributed to exceptionally high customer satisfaction of 9.04 out of 10.

The Need

Western Power Distribution has 1.3 million customers on its Priority Services Register. As is common across the industry, historic data collection and very poor quality industry data-flows have led to this data becoming out of date, impacting its usefulness, including during power cuts.

There are 21 defined vulnerability categories, which enables data to be exchanged consistently between suppliers and networks. Western Power Distribution reports that in 2014, Distribution Network Operators collaboratively analysed 8,558 vulnerable customer data-flows received from electricity suppliers. It was found that data quality was extremely poor, often with records misallocated or with partial data that rendered them unusable.

For example, 18% of all data was allocated under the needs code “other” and 41% of this was then blank or unusable (e.g. simply stating “vulnerable”). This significantly hinders the ability of companies to provide proactive contact and targeted support services to those that most need them.

The solution

Western Power Distribution have created two dedicated PSR data cleanse teams and have committed to contact every vulnerable customer once every two years to update their details and offer resilience and affordability advice. Each call has four core objectives, to:

1. Update the customer’s record
2. Remind them about Western Power Distribution and how to contact the company using the special direct line for customers who are vulnerable
3. Offer resilience advice e.g. what to do to improve preparedness for a power cut as well as during a power cut. For example: checking trip switches, staying warm, using an analogue phone.
4. Offer to refer them to one of the Company’s ‘Power Up’ partners in their local area who offer practical fuel poverty support including: income maximisation; tariff/switching advice; energy efficiency measures; boiler replacements and heating technologies; behavioural changes; health and wellbeing measures.

The process was designed with the help of Western Power Distribution’s Customer Panel and has no scripts or time quotas. Western Power Distribution attempt to make contact by telephone on two separate occasions before an easy-read letter and freepost response form is sent. This helps to provide support to customers in fuel poverty and proactively supports customers to stay and feel safer, including during power cuts.



Where used: Western Power Distribution
Contact: Alex Wilkes - awilkes@westernpower.co.uk
Tel: 07912 098826

Developed by: Western Power Distribution
Potential: Any utility company with a Priority Service Register could do this.

Why innovative: Western Power Distribution are the only energy company in the UK we are aware of carrying our proactive data cleansing of the PSR on this scale. Unusually, with this approach, the vast majority of contact is over the telephone, enabling a personal approach and conversations tailored to the customer's needs. The successful contact and update rate of 65% is significantly higher than any proactive campaign we are aware of in the energy industry.

Impact

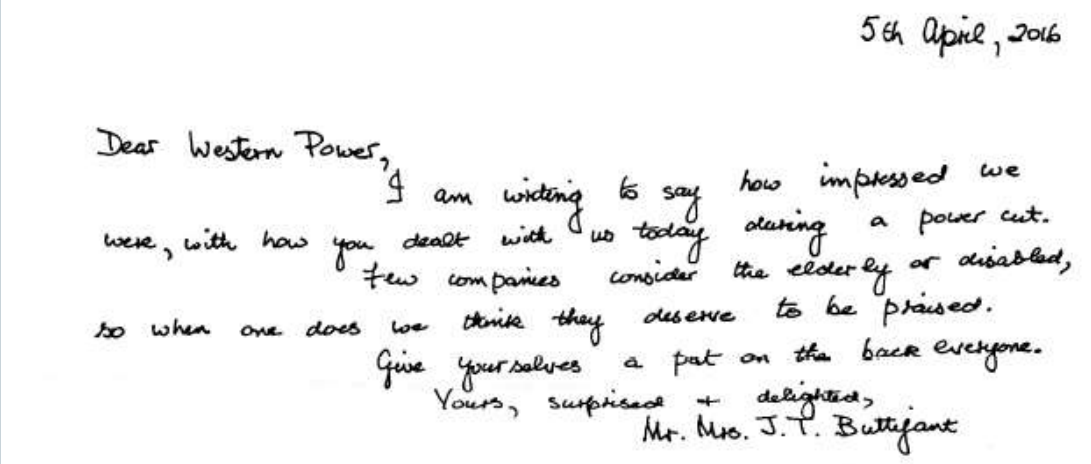
In 2016/17 Western Power Distribution proactively contacted over **650,000 customers**. Of those around 65% of contacts were successfully updated, - including 47% amended, 34% removed and 19% confirmed as correct. This led to a significant improvement in data accuracy with the resultant improvements in tailored customer service, reassurance and support, specifically:

- Improved data quality enables Western Power Distribution to provide a more targeted and proactive service to vulnerable customers in the event of a **power cut**. In 2016/17 Western Power Distribution proactively **contacted 115,747 vulnerable customers within the first three hours of a power cut**, to provide updates on power restoration times and offer additional support including hot meals, drinks and welfare support via partners such as the British Red Cross.
- In 2016/17 this led to price support for **7,205 customers, who directly saved over £1.4 million** a year as a result of Western Power Distribution's contact.

Western Power Distribution's overall customer satisfaction stands at 8.9 out of 10, which they report is the highest in the industry. This project has resulted in satisfaction of 9.04 out of 10.

The project received positive feedback from BSI assessors (2017)

> *The process of continually cleansing the data on the PSR database was assessed through interview with and observation of contact centre advisors… During conversations with staff it was evident that they have a full understanding of their role in achieving the requirements of the BSI standard and that allows them to react appropriately as new situations present themselves, giving Western Power Distribution the flexibility t[o] support temporary vulnerability.*



5th April, 2016

Dear Western Power,

I am writing to say how impressed we were, with how you dealt with us today during a power cut. Few companies consider the elderly or disabled, so when one does we think they deserve to be praised.

Give yourselves a pat on the back everyone.

Yours, surprised + delighted,

Mr. Mrs. J. T. Buttifant

Southern Water:
Universal Metering

ID AF AC IN

Overview

Southern Water carried out a distributional impact assessment using demographic and customer insight data analysis to model likely winners and losers from them rolling out water metering in their area. They proactively identified 10% of customers who were likely to find the move to metering unaffordable and offered them a package of support and in some instances a capped tariff to help address this.

The Need

Southern Water identified around 50% of their customers may have higher bills as a result of the mandatory rollout of water meters and that 10% of these were particularly vulnerable financially from any increase in bills. They wanted to ensure that the poorest of those were shielded as far as possible from any potential price increases and were not left in financial hardship as a result of the metering policy.



The solution

To ensure their poorest customers were not negatively impacted they carried out a distributional impact assessment using demographic and customer insight data analysis by CACI to model likely winners and losers of metering in their area. The mapping involved assessing who was likely to see the biggest bill rises when moved from rateable value charging to metered charges and those who were financially vulnerable using credit reference information and CACI customer demographic, locational and insight data.

They identified 10% of our customers who were particularly financially vulnerable. These customers were contacted by third party organisation Groundworks and were offered energy and water audits to help them save water, delivered by specially trained Green Doctors. Where appropriate water efficiency devices were installed such as water efficient shower heads and tap aerators. Customers were also referred on to independent debt advice experts IncomeMAX to carry out benefits entitlement checks to identify any unclaimed benefits the household may have been eligible for. Grass roots community liaison officers were able to refer people onto the scheme and provide advice on the ground and customers who contacted the company via phone with concerns about their ability to pay, were offered a Green Doctor home visit. A support tariff was offered that capped the bill at rateable value to those still unable to afford it. Since the programme a proactive approach to identifying customers who would benefit from financial assistance and water efficiency advice has continued.

Where used: Southern Water used it during their meter rollout.
Contact: Charlie Palmer-charlie.palmer@southernwater.co.uk
Tel: 01903 272893

Developed by: Southern Water and delivered by Groundworks
Launched: 2010
Potential: Any utility could undertake a distributional impact assessment for operational decisions or use data to identify financial vulnerability - and take proactive action to prevent consumer detriment.

Why innovative:

- Southern proactively carried out a distributional analysis to model the winners and losers from an operational decision and took appropriate preventative action.
- The company focussed on preventing financial vulnerability, rather than responding once a problem arose.
- They provided a joined-up solution – including income maximising and both water and energy audits, given the link between the two.
- The programme was put in place specifically to support customers who were moving to metered charges and such help did not exist before. Ahead of the programme if customers needed help paying their bills they would have needed to contact the company.

Impact

- ✓ As a result of the mapping around **54,000** homes received water and energy efficiency audits (10% of the company's most at risk customers).
- ✓ By using third party Groundworks, Southern were able to access hard to reach groups – where hard to get in the door.
- ✓ Installed a total of **190,000** water saving products.
- ✓ Working with IncomeMAX more than 3,000 customers were helped to secure around **£3.7m unclaimed benefits** and tax credits – an **average of £1,200 per customer**. Initial IncomeMAX target was £1 million.
- ✓ Helped to improve customer trust and engagement with the company. Positive feedback from relevant stakeholders such as MPs, council leaders and regulators.
- ✓ Enabled communication of wider behaviour change messages around water efficiency and the link with energy.
- ✓ Helped gain support for metering which was important as Southern was one of the first companies to roll out metering. The company had relatively little negative feedback on rollout and positive feedback about support for those who were financially vulnerable in subsequent research conducted by Southern Water and CCWater.
- ✓ High levels of customer satisfaction: 98% said the Green Doctors were helpful; 96% said it would help them save water in the future; 99% of customers said they were satisfied by the Green Doctor's approach. Customers described the visits as "brilliant", "helpful and informative" and a "wonderful idea".
- ✓ IncomeMAX Managing Director, Lee Healey, described the programme as a "tremendous achievement."

Lessons learned



- Early buy-in from trusted partners at a regional / national level allows for a more joined-up approach to advice / signposting.
- Social media provides a useful medium to reach customers.
- The impact on customer water consumption, bills and outstanding debt 'should be monitored.'
- It's important to install water efficiency devices, not just hand them out during the home visit. This is because people don't install them otherwise.
- Make more of the link between water efficiency work and the Company's affordability agenda e.g. Southern are now working with a housing association to send information about free water efficiency visits and affordability support with customers' rent statements. This will be supported by text messaging and possibly by door knocking.

S ID AF IN

SSEN:

Interactive Vulnerability Mapping Web App

Overview

SSEN has created an Interactive Web App that can overlay up to 24 different data sets. It can be interrogated by any member of staff with a password, to identify and map vulnerability in an area. It is used to better target help during power cuts and forecast and target where extra help is most needed.

The Need

SSEN wanted to better understand vulnerability in the communities they serve, and to reach and engage with harder to access areas. In particular they wanted to: better target help during power cuts; forecast where customers may need additional help during planned supply interruptions; let customers know about the PSR who are unaware of the help available during power cuts; prioritise network investment to areas in which residents wouldn't be able to cope as well with a prolonged power outage.

The Solution

The company worked with the University of Dundee, the Knowledge Transfer Partnership, the Centre for Sustainable Energy, and vulnerability expert Trisha McAuley to develop a flexible vulnerability mapping tool which can overlay different vulnerability indicators. This is an interactive web-app that can be accessed from anywhere and by anyone with an internet connection. It's live 24 hours a day, 7 days a week and can be accessed, updated or improved anytime new data becomes available. It has weighted algorithms that use the 24 indicators in various combinations to show community resilience, network investment priority areas, PSR prevalence and PSR gap.

LESSONS LEARNED

Additional time and budget to update and upgrade the mapping is important as there are ever evolving new ways to use the information.

The impact

- ✓ The mapping tool has helped ensure customers are protected during repair work, e.g. mapping resulted in mobile generation being provided to the islands of Bute, Great Cumbrae and Little Cumbrae when there were problems with a subsea cable as low resilience and high vulnerability was identified in those areas.
- ✓ It has informed investment decisions – resulting in prioritization of network improvements in areas with high numbers of vulnerable customers who are less resilient to outages.
- ✓ It has enabled the company to strategically target their engagement activity in those areas with high numbers of vulnerable customers and low resilience most in need of support e.g. SSEN has developed partnerships with Wiltshire and Dorset councils and targeted gap funding in these areas to help people access energy efficiency measures they wouldn't be able to otherwise do so.

Where used: SSEN – continually in development
Contact: Simon O'Loughlin simon.o'loughlin@sse.com Tel: 01738 453193
Developed by: SSEN with the University of Dundee, the Knowledge Transfer Partnership, the Centre for Sustainable Energy, and vulnerability expert Trisha McAuley.

Potential: Any utility company could and can use this. SSEN have already given permission to National Grid to use their mapping and are happy to share the methodology with any utility to adapt to their needs.
Why innovative: To our knowledge this was the only web app or interactive vulnerability mapping for the energy industry. It is highly interactive and accessible to anyone with the password from anywhere. It can be interrogated at any level and combination of indicators. It can also easily be updated and added to at any time. Previously the best alternative was either spreadsheets or static maps showing just one vulnerability indicator at a time.

Identifying vulnerability – innovative and good practice snapshots

BT's Natural Language IVR

IN ID AC QW

Contact: Gav Barang – gav.barang@bt.com

Many customers prefer to speak to a person rather than an automated system when they call a company. But where automation exists there are ways to make it more user-friendly for some vulnerable customers. At BT, rather than have a system where customers are told to "press 1 for x and 2 for y" **BT** uses a natural language IVR – *"In a few words please tell us why you are calling us".* This is programmed to identify key conditions or phrases that help to identify vulnerability e.g. "I'm blind" "I can't read my bill", "I can't hear when someone calls", "power of attorney". The system has captured over 80,000 utterances (the actual customer words telling them why they're calling). The Natural Language IVR replaced 16 options for customers to choose and has overcome confusion where customers perhaps couldn't recall, for example, what was mentioned on option 1, option 2 etc. Natural Language is easy – it allows the customer to tell BT in their own words why they are calling – it's also a much quicker experience. Since introduction in 2012, the company reduced the time customers spend in our IVR by over 40 seconds.

Citizens Advice – PSR sign-up tool

IN ID W

Contact: Jake Beavan
Jake.Beavan@citizensadvice.org.uk

Citizens Advice is developing an online PSR sign up tool where customers or carers can proactively register their own, or someone else's additional service/vulnerabilities.

EDF France – social worker exchange

IN ID AF QW

Contact: Juliette.cherubini@edf.fr

EDF Energy France has established a network with social workers to help identify and support customers in vulnerable situations. The energy company's dedicated fuel poverty advisors handled 472,000 requests for support from social workers in 2016. A website has been set up to facilitate these exchanges.

Price Waterhouse Cooper – Debt Analytics Methodology

IN ID AF QW W

Contact: Richard.berriman@pwc.com

PwC have a Debt Analytics Methodology that is used to identify the specific traits of customers that enter into arrears, and calculates risk scores for all customers on their propensity to miss payments and propensity for that debt to be collected where it arises. This has enabled a UK water company to assess whether late or non-payment was something the customer chose to do or whether they simply needed help making their water bills more affordable. By understanding customers better, PWC were able to design an approach to collections that was robust in the event of payment avoidance, and supportive of customers in financial difficulty. This resulted in a 15% increase in the number of customers on low income tariffs. How beneficial these kinds of data insights are to customers in vulnerable situations depends on how the data is used in practice.

Southern Water – Data sharing with social housing providers

IN ID AF W

Contact: Charlie Palmer
charlie.palmer@southernwater.co.uk

Southern Water has a data-sharing pilot underway with Brighton and Hove City Council. The aim is to take proactive action to identify high water users in vulnerable situations who may benefit from additional support available from Southern Water. Southern Water identifies customers with high consumption and this is matched against the Council's social housing occupancy data for each property to calculate per capita consumption. Brighton and Hove then ask the householder if they want to be referred to the scheme. If they do this it triggers a water-saving home visit from a third party provider, Aqualogic. The customer is then relayed onto a single point in Southern Water to discuss available financial and non-financial assistance. The pilot is testing the benefits of data sharing to access hard to reach groups on water efficiency and affordability issues and using the Council as a relatively trusted third party to gain consent to data sharing.

SPEN – Jab and Jabber

IN ID QW

Contact: Pauline Ewart, pauline.ewart@spenergynetworks.co.uk

SP Energy Networks are working alongside flu jab surgeries to identify vulnerable and hard to reach customers in an initiative named 'Jab and Jabber'. Local GPs offer free flu jabs to customers who are over the age of 65; patients with certain medical conditions; patients who are overweight, pregnant women; those living in residential care; carers for the elderly or disabled patients; and frontline health or social work professionals. Jab and Jabber identifies hard to reach vulnerable customers who may not otherwise join a community group or make themselves known to energy companies. Customers benefit from joining the PSR, gaining additional support and being able to access wider services. In addition, this is a way of connecting with neighbours and the wider community for those who are isolated or lonely. An estimated £1.78 is delivered from every £1 spent and there are many more soft benefits for customers.

Yorkshire Water – Financial Mapping

G ID AF QW

Contact: Tom Underwood, tom.underwood@yorkshirewater.co.uk

Yorkshire Water shares its data with credit reference agencies (CRAs). This has allowed it to improve its identification of customers who may be financially vulnerable. By utilising CRA data to make fairer debt collection decisions, thousands fewer customers per year are taken through the litigation process avoiding £3.5 million court fees per annum that otherwise would have been added to customer accounts. Yorkshire Water is now able to signpost these customers to its customer support schemes. CRA data is also used to sign customers up to its social tariff using real-time credit data. Last year, Yorkshire Water allocated £8m to help vulnerable and low-income households and its most popular social tariff, WaterSupport, reduces the bills for low income families whose annual water bills reaches at least £425. 97% of customers who sign up to its social tariff reportedly said they found it easy to sign up.

Western Power Distribution – Wellington Healthy Homes

IN ID AF S AC W

Contact: Alison Sleightholm, asleightholm@westernpower.co.uk

WPD's Wellington Healthy Homes project aims to better target and support vulnerable people in fuel poverty by combining data from multiple parties. They are leading a pilot in Taunton Dean which brings together CSE, the health service, the local authority and Wessex Water. They will match the data from different partners such as property specific energy efficiency data and GP's practice health data to target and enable preventative action to help those most vulnerable to the health impacts of cold homes. Trusted local partners will make the joint health and energy home visits, initially via a GP Health Outreach worker, to provide one to one advice and support. This will include improving household's ability to cope during a power cut; assisting customers to tackle fuel poverty (e.g. support re energy savings, fuel debt, energy efficiency measures, water saving, switching, social tariffs) and delivering substantial health outcomes and patient wellbeing.

Wales and West Utilities/Western Power Distribution – PSR app

G ID QW

Contact: Reece Emmitt - Reece.Emmitt@wwutilities.co.uk

Need

The smart meter rollout offers a real opportunity to identify customers with additional needs including hard to reach groups. Energy companies have historically not had a good track record of recording vulnerability identified during field visits.

Approach

A handful of companies including Wales & West Utilities and Western Power Distribution have consequently developed a PSR app for field staff so they can easily record customer vulnerability when identified during a home visit. The app can be used on their smart phone or tablet. Staff are trained to identify vulnerability and sensitively seek consent for information about the customer's needs to be added to the PSR and shared with other suppliers, networks and in some instances water companies.

Benefits

Passing PSR information saves customers the time and effort of contacting each/multiple companies separately. This makes it quicker and easier for customers with additional needs to register for extra assistance if something goes wrong. It also means they do not have to have the same, sometimes sensitive and emotionally draining conversations, repeatedly. WWU has:

- trained more than 1250 staff (over 100 sessions delivered) –with material constantly updated.
- 91.75% of Wales & West Utilities training has been carried out face to face and all new starters receive the training within their first 6 months of joining the company.
- From May 2015 to October 2017: 4479 referrals were made.
- In 2016/17 - 121 free of charge meter alterations were completed
- A total of £69,002 was allocated to identified customers in need under WWU's Hardship Fund.

Identifying vulnerability – smarter world case studies (see Section 8)

There are a number of innovation case studies in the smarter world section of this report, which may also help to better identify customers in vulnerable situations. In particular:

- Utilita's Smart Prepay Self-disconnection Support p.154
- CSE's Smart and Snug fuel poverty tool p.157
- Advisso's data science approach to identify vulnerability p.158
- EDF's Howz connected homes solution to identify customers in health difficulties at home.
- Liverpool John Moore's and NHS Merseyside's health monitoring – using energy usage data to track the development and progression of health conditions such as Alzheimers
- The Sensor Platform for Health Care in a Residential Environment – to detect medical and wellbeing conditions p.163

Guide 2:

Improving access



Guide 2: Improving access

Regulatory context/need

Millions of consumers may face additional challenges when trying to access the best tariff in the market for them, and the services and information they need to effectively manage their energy use and stay and feel safe. Well-designed company services and tailored support can help to ensure people are not at a disadvantage due to their physical characteristics or personal circumstances.

Ofgem states that a market that works well for consumers is accessible, inclusive, and responsive to their needs and "expects companies (both networks and suppliers) to design and deliver products and services with vulnerable consumers in mind to avoid creating or exacerbating vulnerable situations. "[68] In practice there is a strong link between identification of vulnerability and ensuring access.

Energy companies have a number of obligations around accessibility. In particular, the **Equality Act 2010** requires them to not to directly or indirectly discriminate against those who have protected characteristics[69] and means businesses have to make 'reasonable adjustments' to ensure access to goods, facilities and services.

Ofgem's revised **Priority Services Register** licence conditions are intended to go beyond this and ensure equal outcomes for customers in terms of communication, access and safety. The **Standards of Conduct** also require suppliers to treat all customers fairly, and the new **Vulnerability Principle** makes clear that in order to treat customers fairly, companies must take into account their differing needs. The Standards relate to behaviour, information provision, customer service, and enabling customers to make informed choices. Ofgem has stated that companies should provide 'wider services to customers where need is identified and where reasonably practicable'. But also, importantly that services should reflect technological innovation.

Alongside these there are a number of specific accessibility requirements for those on **low incomes**, using **prepayment** and around **smart metering**. For example, under licence conditions suppliers must offer customers in debt a choice of payment options. The smart meter In-Home Display must designed to enable the information displayed on it to be easily accessed and presented in a form that is clear and easy to understand[70] (see page 148). Under the Smart Metering Installation Code of Practice (SMICOP) suppliers must also, when they install a smart meter, show customers in 'an easy-to-understand way' how to use the smart metering system and information available, including the In Home Display (IHD). There is a specific requirement for this demonstration and associated materials provided to be 'informed by' any specific needs or 'known vulnerability' that the customer may have.[71]

[68]. Vulnerable Customers in the Retail Energy Market, Ofgem, October 2017

[69] The protected characteristics under the Equality Act are: age; disability; gender assignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex and sexual orientation.

[70] The Smart Metering Equipment Technical Standards (SMETS), Chapter 6, paragraph 6.3, p. 96.

[71] Smart Metering Installation Code of Practice, Ofgem, April 2013.

Improving access - standard practice

Standard practice tends to include the following. Not all companies offer these services but a significant number do:

- Quarterly meter reads (which smart metering should remove the need for)
- Nominee scheme so a carer or third party can manage a person's affairs e.g. bill redirection
- Adjustable and talking websites
- Talking bills and braille – though Ofgem reports these are provided less often
- Large print
- Print copies (where information is online)
- The provision of minicom/text phone services.
- Translation service e.g. Language Line
- Outreach activities e.g. community liaison officers or community champions.
- Signposting or referring to third parties for help and support, to complement support provided in-house. The help available is ideally promoted consistently across communication channels and at all points of the customer journey from acquisition through all customer service interactions.

Some examples are below:

United Utilities – talking bills

AC

Contact: Rose Frances - Rose.frances@uuplc.co.uk
Tel: 0345 072 0822

A number of water and energy companies including United Utilities offer blind and partially sighted customers a service where they will call the customer when their bill is ready. The company will then talk them through the bill to check they understand what they are paying for and answer any questions.

UK Power Networks – BrowseAloud

AC

Contact: Kerry Potter, kerry.potter@ukpowernetworks.com

A number of energy companies have accessibility features on their website. UK Power Networks' Browsealoud is one example. It supports those with: poor literacy skills, print disabilities, English as a second language and those who lack digital skills. Customers can hear text aloud; convert information to MP3, translate it, add a screen mask to block on screen clutter, simplify the web page, magnify text and/or personalise the approach. BT also use BrowseAloud and test their website with people with disabilities through a charity called Abilitynet.

Improving Access – The Winning Innovations

- **Gold** Western Power Distribution's two-way texting
- **Silver** SSE's SignVideo
- **Silver** Bristol Energy's the Energy Hub
- **Bronze** Sensus ApS and the National Resource Centre for the Blind and Partially Sighted Children and Youth – Robobraille

The award winning innovations outlined above were short-listed as part of Project Inspire and voted on by an independent panel of judges at our *Energy for All, Innovate for All* event in April 2017 (see p.24). The judges in this category were:

- AgeUK - Mervyn Kohler
- Action on Hearing Loss – Ed Rex
- Mencap - Alexia Karageorghis
- RICA – Caroline Jacobs
- RNIB – John Worsfold

It should be noted that there was not always agreement on what *was* deemed to be good practice and effective innovation. Some of our award-winning innovations split the judging panel/the wider audience. The evidence base on what services energy customers with additional needs, in particular disabilities, themselves prefer is not readily available. Using take-up statistics may not be an appropriate proxy given the potentially low levels of awareness of services available. We identified a number of good approaches that did not appear to have been adequately promoted. While our award-winning accessibility innovations were judged by a panel of disability experts and often designed with disabled customers, we do not assume that they reflect the most popular services for end-users available. We encourage EUK to develop this evidence base as part of its Energy and Vulnerability Commission in 2018.

> *There are improvements needed with many of these innovations but it's only through discussion that these get ironed out... But my, if the energy world picked up even half of the ideas [that are now in these guides] we'd live in a much nicer world of domestic energy.*
>
> **Mervyn Kohler - Age UK**





Western Power Distribution:
Two-way Texting

S AC IN

Overview

Western Power Distribution offers a two-way texting service to all their 98,000 deaf and hard of hearing customers and is now looking to extend this service to all customers. Many people including those with other disabilities, e.g. learning difficulties, prefer to communicate by text.

The Need

Western Power Distribution has around 98,000 people who are registered as deaf and hard of hearing. For these customers, contacting Western Power Distribution may be more difficult particularly in emergency situations e.g. outages. The main method of communication with Western Power Distribution is telephone call. While other platforms (e.g. website updates, social media and the Western Power Distribution app) are available, many vulnerable customers do not use or have access to these.

The Solution

The two-way service was developed with support from Text Local following the success of their one-way texting service. It allows easy immediate interaction between the company and customers. For example they can report a power cut, and Western Power Distribution can provide updates when the customer is off supply and time to restoration. All 98,000 customers registered as deaf or hard of hearing on their PSR were written to and sent an information leaflet. The leaflet also contained a credit card sized card with the text number to keep it easily accessible. The text is forwarded to the social media team and responded to immediately in the same way as an incoming call.

Where used: Western Power Distribution
Contact: Alex Wilkes awilkes@westernpower.co.uk
Tel: 07912 098826

Developed by: Western Power Distribution with Text Local
Launched: September 2015
Potential: Any utility company could do this – the primary limitation the need for accurate mobile phone numbers.

Why innovative: While other energy companies offer one-way texting services, we are not aware of any other energy utilities offering a two-way texting service.

Benefits/impact

This is a powerful quick and easy way to engage:

- ✓ High numbers of texts were sent during Storm Doris in February 2017.
- ✓ Replies to outgoing company texts are usually received within 5 minutes with the majority of replies from customers immediate.
- ✓ Since its launch September 2015, 886 incoming texts have been received.
- ✓ Provides another means of support to vulnerable customers during power cuts. Western Power Distribution ensure that text conversations are followed up to ensure that power supply is restored to the customer.
- ✓ Reduction in call centre traffic.
- ✓ Positive customer feedback has resulted in the service being extended to all customers.



The primary limitation to success of the service is the reliance on accurate mobile phone records. Currently, Western Power Distribution hold 60% of customers' mobile numbers, having risen from 10% in the last 18 months. This ideally should be 100% to allow full benefit to customers and Western Power Distribution of the texting system.

Previously, the one-way texting system sent texts to landlines. However, this produced some customer complaints that caused Western Power Distribution to remove landline numbers from the texting system. The main complaint was that if the landline was a cordless phone, the customer would not receive the message until power was restored to the property where they would also receive a message to let them know of the restoration.

SSE:
SignVideo

AC IN QW

Overview

SignVideo enables deaf or hard of hearing customers who use British Sign Language (BSL) to communicate with SSE in their language of choice by making and receiving BSL interpreted calls, in real-time.

Need

Around 150,000 deaf and hard of hearing people in the UK and communicate through BSL. BSL is distinct from English and for some BSL users, English is not their language of choice. Using online chat or email can therefore be a huge barrier. Customers who are deaf sometimes need to rely on help from a third party to deal with their affairs. This can take away personal responsibility, making the customer feel less able. For those who are comfortable with English this kind of approach offers a more real-time natural conversation than alternatives such as text box, type talk, letters, emails, social media, and webchat. Use of video relay is supported by Action on Hearing Loss and Deaf Parenting UK.

> *SignVideo puts us in control, giving us the freedom of who to call in BSL without having to rely on English, or ask someone to make the call...*
>
> ***Asif Iqbal, Deaf Parenting UK***



The approach/customer experience

When contacting the company from home, work or on the move, deaf customers click on the SignVideo button on the SSE contact webpage. They can then have a live secure conversation with SSE using a fully qualified British Sign Language (BSL) interpreter. The service can be accessed by smart phone, tablet, computer or laptop and requires a webcam, and broadband internet connection. It is available 8am to 6pm Monday to Friday. It can be used instantly when a customer contacts the company remotely or to talk to field agents e.g. during a smart meter installation visit or an outreach event. Implementation is easy. SSE promoted the service to all its deaf and hard of hearing customers on its Priority Services Register. SSE is working towards ensuring that access to SignVideo is part of its standard smart customer journey, from pre-appointment to post-installation. In order to implement the service successfully, SSE staff are trained by a BSL trainer and interpreter. This approach ensures that staff are able to experience the service first hand, and ask direct questions about the service. The service is also promoted on an on-going basis through SSE's social media channels, and customers can sign up to the service by accessing sse.co.uk/signvideo.

> *I'll never forget my first SignVideo call, I felt so empowered! It made me realise how easily and quickly hearing people sort things out on phone while we BSL users have to send emails back and forth or rely on the ancient and monotonous text relay service which lacks real human connection. This service is amazing and makes me feel truly equal on a professional level.*
>
> **H.R.**

Where used: SSE and its white label partnerships. SSE was the first energy company to introduce video translation. BG launched it in March 2017. BT, Virgin, Sky and Barclays amongst others also use it. Western Power Distribution offers an equivalent service called InterpreterNow.

Contact: Daniel Dennis - Daniel.dennis@sse.com
Developed by: SignVideo
Launched: September 2015

Potential: 150,000 people in the UK communicate through British Sign Language. Sign translation could be used by any customer-facing organisation. This includes by call centre and field staff e.g. it could be used during a smart meter rollout pre, during and post installation. There are a number of video translation providers who offer this kind of service.

Impact/benefits

- ✓ SSE have on average 21 calls per month that use the service
- ✓ SignVideo offers a faster and more natural experience than the current alternatives. Face to face communication via SignVideo can be instant and removes any inconvenience or wait involved in having to book an interpreter.
- ✓ It allows customers who are deaf to communicate directly with SSE and manage their own account in real-time, getting answers directly and efficiently in the same way a hearing customer would.
- ✓ All customers using the SignVideo service are directed to a specialist team within SSE, who are multi-skilled to be able to deal with a wide range of customer service queries. This means the customer can maintain one point of contact with SSE and receive a prompt response.



- Requires customer access to a high-speed broadband connection/3G or 4G data.
- SignVideo's opening hours are not aligned with SSE's business hours.
- There may be some interoperability issues depending on the browser/technology the customer uses.
- It is important to promote the service.
- Where calls have been abandoned, need to call back to iron out teething problems and support customer access.

Case study - Craig Halliday from SSE Homemoves:

"When I first spoke with the customer, through their interpreter, they had recently moved into a home which had a prepayment meter with debt left on it. They were looking to have the debt cleared and change to a credit meter.

To ensure we resolved the issue quickly, I was trying to arrange an emergency appointment. However, to do this we had to find a time to suit both the customer and their interpreter, which proved challenging and time consuming.

I had spent almost two months trying to resolve the issue for the customer and was worried about how we could help her when I heard about our new SignVideo service. We had only just partnered with SignVideo so it was great timing. I sent the customer the link to our website and explained how to use the service. A couple of days later the customer was speaking to me using SignVideo and we had the appointment sorted out in minutes. The service was really easy for me to use too.

The customer was thrilled that they now had an easy way of communicating with their energy company without the need for her interpreter to contact us or rely on email back and forth. By using SignVideo the call is quick and easy, giving customers extra time to get on with other things."



Bristol Energy:
The Energy Hub



Overview

The Bristol Energy Hub is a welcoming customer service point and community events space where customers can enjoy face-to-face accessible customer service and support to better manage their energy and save money e.g. ask questions about bills, switching, energy efficiency advice.

The need

A standard relationship between supplier and customer is either over the phone, via email or increasingly through online chat services. These traditional methods can be useful, but they can also feel very impersonal, and a one-way relationship. Energy suppliers have a notorious reputation for being opaque, invisible and hard to reach with low levels of trust in companies and high numbers of customers not switching and on expensive standard variable tariffs.

The solution/approach

The Bristol Energy Hub is a unique customer service point and events space, located in the centre of Bristol. Customers and prospective customers can enjoy face-to-face service, often over a cup of tea, from the energy team, including help understanding bills, information on switching supplier and energy efficiency advice for their home or business. The Hub also runs and hosts entertainment and information events.

AC IN QW

Benefits/impact

The Hub reached more than 10,000 people in its first year, building brand awareness and encouraging people to switch and save money.

It offers a friendly face-to face accessible way to communicate with the energy supplier. It provides people with new ways to engage with energy by holding entertaining and informative events, which can reach people who might not have considered or feel comfortable picking up the phone or going online to ask for information. It also offers a free events space for community groups and local charities that share the company's social values. More than 50 events have been held since 2016 'of all shapes and sizes from morning til night'. E.g.

- LinkAge events bring together otherwise socially isolated elderly individuals to give energy efficiency advice over coffee and cake.
- School holiday activities and arts and crafts.
- Caring in Bristol Christmas Gift Wrapping (market and workshops) for 400+ people
- Hosted Briswool, an amazing knitted city of Bristol where people make their own woolly additions (6,000 visitors in October 2016)

Where used: Bristol Energy
Contact: Kester Byass, Product Manager
kester.byass@bristol-energy.co.uk

Developed by: Bristol Energy
Launched: 2016

Potential: While arguably this approach is best suited to regionally based companies, any utility could do this. Potential value of mobile/pop-up energy hubs for rural/remote areas.
Why innovative: As far as we are aware Bristol Energy is the only energy supplier with a permanent walk-in shop front that also acts as a dynamic community space.

- Bristol Energy says "We know we need to work harder to encourage people from wider Bristol communities to use the Hub. In its central location, it is more difficult for people in wider Bristol communities to engage with us. We are looking for more partners to help us with community outreach and other techniques like organising transport for people, or taking a pop-up version of the Hub to them."
- Cost and resource are an inevitable barrier to rolling this out more widely. But with the appropriate commitment this is scalable with alternative versions such as pop-up community energy hubs in different locations.





Bristol Energy is a fantastic concept, great to hear all about it at the Hub. I learnt how to screen print, and learnt how to save energy and money. Perfect!

Visitor

The activities that Bristol Energy have run at the Hub with LinkAge have been extremely positive. We've had some great feedback from the older people and they have really enjoyed the activities... The older people we work with have also found the energy advice and money saving tips provided by Bristol Energy to be invaluable.

Lucy Saunders, Senior Development Manager, Linkage Bristol

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Sensus ApS:
RoboBraille

Overview

RoboBraille automatically converts a wide range of documents into alternate formats such as audio books, digital large print, e-books and Braille. The service is being used internationally by people with print disabilities, including the blind, partially sighted, people with dyslexia, poor language skills, cognitive disabilities, motor deficiencies, learning disorders, concussions and others to convert material into more accessible formats. It is free to individual users for non-commercial use and available by subscription for other companies or organisations.

Need

People with print impairments require material in alternate formats. For example, many blind people require material in Braille, either digital on Braille displays or embossed on paper using a Braille embosser. Partially sighted people often need large-print material, preferably adapted in accordance with individual diagnoses and personal preferences in terms of enlargement, typeface, colours, contrasts and line spacing. The visually impaired also frequently use audio books. People with dyslexia, learning disorders, poor reading skills or poor language skills may need audio books and printed material that has been adapted to individual preferences. People with physical disabilities may need digital editions that can be navigated on e-book readers using switch controls. Traditional means of document conversion are often subject to considerable delays (sometimes for weeks or months), involvement of other people and – in some case – payment for conversions by companies sometimes at considerable cost.

RoboBraille addresses several consumer problems relating to the inaccessibility of printed information. Chief amongst these are (1) timeliness of getting information converted into an appropriate format (2) reliance on others to manage own energy affairs (3) associated invasion of privacy and (4) cost of alternatives to companies such as translation services/cost of producing braille/alternative formats.

Solution/approach

RoboBraille is a web and email based service that automatically converts documents in a variety of formats (Microsoft Word and PowerPoint, RTF, text-files) into alternate formats such as audio books, digital large print, e-books and Braille that are more accessible or easier to use for those with disabilities. This includes otherwise inaccessible or tricky documents (such as image-only PDF documents created by scanning, pictures of text captured with a smartphone, and PowerPoint presentations). Depending on the size, shape and format of a document and the requested target format, conversions are completed in between two minutes and two hours.

RoboBraille supports conversion of a variety of document types including (but not limited to) letters, statements, newspaper articles, information leaflets, PowerPoint presentations, novels and textbooks. Documents already available in a digital format can be submitted directly for conversion. Paper-documents can be digitised with a scanner or by using the camera function on a smartphone.

The audio and Braille conversion features of RoboBraille have support for a large number of languages. These include all the main European languages, including Welsh, American English, Latin American Spanish, Arabic, Russian, Mandarin, Cantonese, Taiwanese, Korean, Japanese and more.



Impact/benefits

- ✓ The RoboBraille service is available world-wide and is being used by several thousand users a day across the globe. It is scaleable. It is an efficient, inexpensive, intuitive way of converting material into alternative formats.
- ✓ Making RoboBraille available to customers in the energy industry would mean that **all customers with print impairments** could request **all types of information** delivered in alternate formats in accordance with their **individual, personal preferences** and at a **fraction of the cost** compared to the current practice.
- ✓ Such conversions could either be **user-driven** (users request on-the-fly conversions of documents via a RoboBraille web interface) or **systems-driven** (energy companies request batch conversions to a set of predefined formats via the RoboBraille web API).
- ✓ As RoboBraille is entirely automated, people with print impairment can request documents to be converted whenever they need, wherever they are, and without involving other people in the process. This means that documents can be made available in alternate formats in a prompt manner. It furthermore means that people with print impairments can take control and keep their privacy as they do not need to share what they are reading with others.
- ✓ The conversions are provided for free for the end user for non-commercial use and available to companies on subscription. It can be customised for company use and introduced potentially very quickly.

Where used: Internationally by a wide range of organisations including banks, pharmaceutical companies, education establishments.
Contact: Ms Tanja Stevns – tanja@robobraille.org Tel: +45 23 24 06 72 and Lars Baillieu Christensen – lars@robobraille.org Tel: +45 40 32 68 23

Developed by: Sensus ApS and the National Resource Centre for Blind and Partially Sighted Children and Youth.
Launched: End user services launched in Denmark 2004. Web API integration capabilities in 2016.
Potential: RoboBraille is scalable. Commercial use is subject to a service agreement. A customized version of the web interface would typically be available to an energy company within 2 weeks. Implementation within an existing website within a few hours!

Challenges/lessons learned



- Not all customers like automated services and they may perceive self-service as a reduced service until the benefits are explained.
- Important to constantly involve users in the design of improvements
- Provision of alternative formats for complex documents is not always possible due to technological barriers
- Resistance among traditional providers of alternative formats.



RoboBraille has won a host of other awards including:

- ★ The European Commission e-Inclusion Award for e-Accessibility
- ★ Social Contribution Award from the British Computer Society
- ★ Highlighted as a best practice example in relation to the implementation of principles of the UN Convention on the Rights of People with Disabilities

Improving access – good and innovative practice case studies:



Austrian Sign Time - SiMAX avatar technology

IT AC QW W

Contact: Mr. Georg TSCHARE - +43 660 8001012
Beate Wohlschlager - beate.wohlschlager@signtime.tv

Signtime offers a quicker and more affordable solution for translation into sign language using an animated avatar. Around 327,000 people in the UK use British sign language (BSL). Currently, most information – both written and verbal – is not accessible to many people who are deaf, as written text is a foreign language to them. SiMAX is a semi-automatic system designed to translate text or verbal communication into sign language by combining technology from animation pictures, the computer gaming industry, and computer-aided translation services. The translation process is managed by qualified deaf translators. As such SiMAX also creates high-quality jobs for deaf people. Automation is possible for standardized texts, e. g. traffic information, security alerts. The system applies the natural grammar principles of sign language. Facial expressions have a grammar function in sign language (e. g., raised eyebrows symbolize an interrogative sentence), which the avatar is capable of displaying. The avatar shows emotion and can move its head and upper body fluently. A “learning machine” is integrated into the system, which saves all previously performed translations and keeps them ready as proposals for future translations.

Barclays:
Social Services Link

G AC W

Where used: Barclays.
Contact: Zoe Dixon, zoe.dixon@barclays.com
Developed by: Barclays with Manchester City Council Social Services

Stage of development: Pilot just completed.
Potential: Any provider.
Impact: Evaluation of the pilot underway to understand how it has worked, can be improved and how this might be rolled out more widely if appropriate.

Overview

Barclays have set up a new scheme that empowers staff to identify and support customers who need wider help than the company is able to provide and refer them on to access relevant social services.

Need

Staff at Barclays often engage with customers that they are concerned about, and who need help that Barclays is not able to provide. These include customers who are experiencing significant challenges in their life such as the onset of disability or impairment, where the customer has had a life-changing accident or illness, or situations involving mental capacity limitations or financial abuse. While Barclays' colleagues will always want to help these customers, Barclays is aware they do not always know where to send customers to get help. Citizens Advice good practice recommends that companies develop guidance on which agencies should be contacted at what times and who should do this.

Approach

Barclays has worked with Manchester Social Services to train staff about:

- Where they can refer customers to for additional help, including referral to adult social care provided by the Local Authority (to over 18s). Included:
- When and how to make effective and timely referrals to emergency services, external support groups, and health professionals. In particular:
  - understanding - what types of customer cases would be suitable to engage Social Services with
  - questions – what initial questions to ask of the customer / what actions to take
  - Consent and data privacy - how to obtain customer consent for referral (while recognising that in the most serious or concerning cases, it might be in the customer's best interests to make a referral if this consent could not be obtained. The project ensured that only limited data about the customer would be shared with Social Services
  - referral - how to refer to Social Services (and what customer information can and cannot be shared)
  - recording - what information to record on the customer's record about the referral.

FCA – Letter writing group

G AC QW

The Financial Conduct Authority's good practice guide on vulnerability highlights that an unnamed life insurance firm due to customer complaints and focus group feedback set up a letter writing group, comprising expert practitioners, to establish best practice. All customer staff then had to attend training on writing. They also undertook a systematic review of certain letters. This resulted in colour coding, shorter letters, and the prioritisation of options according to those most relevant to the customer. The company now reportedly actively seeks feedback on communications and revises them accordingly. This includes customer's annual statements.

Robin Hood Energy – Personal responsibility

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Robin Hood Energy asks all of its frontline agents to take personal responsibility for each customer they speak to. Agents will support customers to access the help and support they need on an individual basis and customers are encouraged to call back if they need any further assistance.

CSE – online videos

G AC QW

Contact: nick.banks@cse.org.uk

The value of videos and images to communicate is well-recognised. For example, CSE developed a two minute video about input output controls on night storage heaters. It got over 20,000 views despite limited promotion. It was done in-house with very basic resources. In CSE's words "it quickly racked up over 20,000 views. Not quite a Youtube sensation but it's clearly meeting a need and it extends the reach of our advice work". CSE have done a number of other videos, including a tailored one for Bristol City Council tenants on heating controls. Advisors find them useful as follow-ups to home-visits to remind clients what they are shown. Routine use of videos is not yet standard practice by energy companies.

Next Generation Text Service

Next generation text service

G AC QW

Contact: https://ngts.org.uk/contact.php

This service helps people with hearing loss and/or speech impairment to more easily contact and communicate with their energy company by phone. A relay assistant acts as an intermediary to convert speech to text and vice versa for the two people in conversation:

- Text and read is best if you can't hear and don't use your voice
- Speak and read should be used if you can't hear but do use your voice
- Type and hear will be most useful if you can hear but don't use your voice
- Speak and hear works best if you can hear and want to speak to someone who uses NGT

Research by Ofcom among users of old text relay services found that callers were frustrated by their inability to interrupt and to hold 'real time' conversations. They also reported that speeds of conversations were generally slow, as callers had to take turns to speak or type. To access text relay previously users needed a text phone which Ofcom reported was around £300 and are not easily portable. 'Next generation' text relay enables easier access to the service on the move on devices such as smart phones, tablet computers and laptops. Users can still use the service using a textphone but NGT now enables access to the telephone system via a range of other ways.

SMART ENERGY GB

Smart Energy GB – Easy Read

G AC QW

Developing Easy Read materials is good practice but still not wide-spread in the energy sector. The British Institute for Learning Difficulties has worked with Smart Energy GB to develop accessible information to help make sure the smart meter rollout works for everyone including those with learning disabilities. CSE has also developed an Easy Read guide on how to read your meter. RICA has also been working with British Gas to develop more accessible communications particularly for those with visual and cognitive impairments.

SSE – Smart and Electric Heating Community Liaison Officers

G AC QW

Contact: Helen.sanders@sse.com

SSE has three Smart Community Liaison Officers (CLOs) working in local communities to raise awareness and understanding of smart meters, and to offer face-to-face post installation support for customers who need it. CLOs work with grass roots organisations such as NEA, Age UK and Citizens Advice at a local level, as well as engaging with community groups to help those who may not be aware of smart, or those who may be confused or concerned about rollout. SSE is looking to increase the number of CLOs. They also have two Energy Liaison Officers who offer home visits to customers with electric heating. The service is available across Scotland. These officers share their experience and knowledge with the electric heating specialist team.

UK Power Networks – Faith and Power

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Contact: Kerry Potter - kerry.potter@ukpowernetworks.com

UK Power Networks worked with London Sustainability Exchange to develop a tool kit called 'Faith and Power' to help run energy campaigns (energy efficiency, smart metering, fuel poverty, resilience) for an Islamic audience. It builds on more than 10 years' experience and offers helpful advice of things to consider when engaging faith groups. This includes: key messages developed for an Islamic audience; an example campaign and sources of support. Muslim groups can be 'hard to reach' with a tendency to miss out on traditional forms of marketing. Across the UK Muslims suffer disproportionately from fuel poverty. It is designed in particular to support frontline advisors e.g. during smart meter rollout, Big Energy Saving Network.

WWU – Plain English

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Contact: Reece Emmitt - Reece.Emmitt@wwutilities.co.uk

WWU worked with the Plain English campaign to Crystal Mark all their external correspondence, removing gobbledygook, jargon and any misleading information.

USER1ST – Website Accessibility

IT AC QW

Contact: Neil Levy – n.levy@user1st.com

Coca Cola, IKEA, and Sheraton Hotels are among more than a hundred companies using USER1ST's ICT tools to make their websites fully accessible. The tools are cloud based (no extra software needed) and automatically detect and correct all kinds of errors on webpages creating full accessibility. The key aspect of USER1st is the full automation of the process. USER1st seeks to tackle the problem of website accessibility for persons with disabilities. To date, the process of creating barrier-free websites has been expensive and time consuming, requiring research, risk-analysis, technical know-how, qualified staff, third parties (to assist, if necessary), and an implementation plan. In worst cases, it can take years to code or re-code existing websites and amend them to meet WCAG 2.0 AA standards. Consequently, many organisations shrink to implement barrier-free websites. This solution is more cost effective and efficient way for designers of webpages to make them barrier free. This service has won an e-inclusion award.

Improving access – smarter world case studies (see Section 8)

There are a number of innovation case studies in the smarter world section of this report, which could improve access for customers with additional needs:

- geo's accessible in-home energy display p.149
- New interfaces including virtual assistants p.151
- Microsoft Skype p.152
- Flipper's automated switching service p.164



Guide 3:

Safety and peace of mind

Guide 3: Safety and peace of mind

Regulation/need

Some householders are more likely to suffer detriment when things go wrong such as during a power cut or emergency situations. Others require more support to feel and be safe even during routine operations such as meter readings or home visits for smart meter installations.

In addition to ensuring the general robustness of their technical service and equipment, suppliers and networks have a number of number of safety obligations to support customers in vulnerable situations. In particular, the new outcomes based **Priority Services Register obligations** are designed to ensure equal safety outcomes for customers with additional needs and enable greater flexibility and innovation in terms of service provision.

Energy suppliers are also required to provide **free gas appliance safety checks** to certain eligible vulnerable customer groups and a check will also be performed during a gas smart meter installation.

In addition, linked to affordability, there are also a number of protections around prepayment, disconnection and load limiting. Under supplier licence condition 28.1A for example: where suppliers become aware or have reason to believe it is no longer safe and reasonably practicable for the customer to use a PPM, they must offer to alter the position of a prepayment meter or adjust it in some way so it a safe to use.

Incentives

Gas network companies are explicitly financially incentivised to address the dangers of **carbon monoxide** via the Gas Discretionary Award. This incentive scheme is designed to reward exceptional outcomes achieved by GDNs for consumers that can be regarded as best practice and replicated across the industry. The incentive encourages collaboration through its 'joint submission category' as well as individual network performance. We identified a large number of initiatives, which seek to raise awareness about the dangers of carbon monoxide poisoning. Many of these innovations had already been shared with other GDNs arguably reflecting the effectiveness of this incentive and a greater culture of collaboration on safety issues among GDNs. Given the number of approaches, we highlight only a few examples of good and innovative practice linked to carbon monoxide overleaf.

Safety and peace of mind – standard practice

Standard practice tends to include the following. Not all companies offer these services but a number do:

- **Customers given advance notice by companies of planned power cuts** – if a person is medically reliant on their supply the network operator will give advance notice of planned power cuts (for example, where they plan to carry out engineering work).
- **Priority support in an emergency** – this could involve the network operator in providing alternative heating and cooking facilities in the event of supply interruption or prioritising reconnection of supply to highly vulnerable households.
- **Identification/password schemes** – to reassure the customer that callers, for example meter readers, are genuine. Suppliers have to provide additional support to identify someone acting on behalf of their company, such as arranging a password or showing an agreed picture card upon visit.
- **Nominee scheme** – customers can ask their supplier to send communications (such as account statements or bills) to someone they have nominated (for example a family member or carer) who has agreed to receive them. Or they may ensure that a carer or appropriate third party e.g. social housing or sheltered housing warden is present during energy company interactions in the home such as smart meter installation.
- **Free gas safety checks** – Ofgem reports that the number of customers who have received a free check from energy suppliers has increased slightly from 10,986 to 11,849 between 2015 and 2016. However, the levels are much lower than they have been previously, with over 50,000 in 2006 and over 35,000 in 2011. The regulator has set out an expectation that suppliers to do much more to offer free gas safety checks to those who are eligible for them.
- **Reposition a prepayment meter** – as it's not safe and reasonably practicable to use**.** Almost twice as many customers had a PPM repositioned free of charge at their request in 2016 than in 2015 - 2,374 PPMs (either electricity meters or gas meters) were repositioned free of charge in 2016 compared to 1,218 in 2015.
- **Outreach and education** – such as work with schools and community groups to raise awareness of safety issues including the dangers of carbon monoxide.
- **Emergency packs** – see below.

Emergency Packs

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Most electricity network companies have some kind of emergency box or keep warm pack that they make available to customers in vulnerable situations to support them during a power cut. For example, UKPN's Emergency Box has been distributed free to 2,500 customers who are medically dependent on electricity. It is also available at cost to all. It includes items such as: plug in the wall torch, which would automatically switch on under/in a power cut; a glow stick and a storage bottle where people can keep their vital personal and medical information in the event of an emergency. It also contains a 'checklist' that outlines what customers can do to be better prepared for a power cut. Customer feedback on the box has been positive with a customer satisfaction rate of 9.8 out of 10 for their emergency pack.

> *I think it's brilliant because it made me aware that I'm on the Priority Services Register. The bits of kit they sent, it's not just the kit but it has made me more aware in my mind to be more prepared. It has been a big reminder to get more prepared and I think the torch is brilliant.*
>
> **Customer**

> *I panic about power cuts to start with and obviously being disabled getting around in the dark is not good. Now I've got the torch and I suppose the glow sticks as well, which makes me feel more comfortable.*
>
> **Customer**

Safety and peace of mind – The Winning Innovations



- **Gold** SGN Gas Locking Cooking Valve
- **Silver** Homeglow Products - B-Warm
- **Silver** Smart compliance - The Smart CO Detector
- **Bronze** SGN Neighbourhood Alert

The award winning innovations outlined above were short-listed as part of Project Inspire and voted on by an independent panel of judges at our *Energy for All, Innovate for All* event in April 2017 (see p.24). The judges were:

- Age UK – Mervyn Kohler
- British Red Cross – Charlie Baxter
- Citizens Advice – Jake Beavan
- RICA – Caroline Jacobs



It should be noted that there was not always agreement on what *was* deemed to be good practice and effective innovation. Some of our award-winning innovations split the judging panel/the wider audience.



Photo: The locking cooker valve

SGN:

Gas Locking Cooker Valve

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Overview

After getting the idea from the charity Dying to Keep Warm, SGN, with the charity's support, have been developing the free locking cooker valve service. The locking cooker valve is a simple device gas engineers can fit for people in vulnerable situations – perhaps suffering from dementia or autism – to prevent fires and explosions and to give their families peace of mind.

The Need

People living with dementia or autism can be at risk from leaving gas cookers on and unlit increasing the risk of a gas explosion, or forgetting about a saucepan/frying pan on a lit hob. People with dementia also can put electric kettles on gas hobs which can cause fire and fumes as the kettle melts. Organisations including Dying to Keep Warm, Fire and Rescue and occupational therapists have evidenced this. Without a simple way of stopping the gas flowing to the cooker when relatives or carers aren't there, people can lose their independence and often have to move into care homes sooner for their own safety.

Where used: SGN, Northern Gas Networks and National Grid Gas
Contact: Pamela Goee Tel: 07818 458855 pamela.goee@sgn.co.uk
Developed by: SGN and Dying to Keep Warm
Launched: First piloted in 2014

Potential: SGN have pressed for other GDNs to adopt this and they launched a National Campaign. They have now set up a good practice group chaired by Chris Bielby, Chair of the Gas Safety Trust, with members from all the gas networks and gas safe register to make sure the service is applied consistently across GB. In the next phase they want to extend it to Northern and Southern Ireland.

For more information:
https://www.youtube.com/watch?v=0hx6StlBZAo

The Solution

The locking cooker valve enables the gas supply to a cooker to be locked and unlocked easily by a carer or relative. This eliminates the risk of the cooker being unintentionally turned on or left on. The carer or relative can easily turn the valve on using the key when the cooker is required. The service is free of charge, customers who could benefit from the service can be referred through a range of partner organisations including occupational therapists, Fire and Rescue, social worker, carers, or relatives. Networks may also identify customers who would benefit from a valve to a referring partner. To fit the valve, a visit is made to the address along with the referring body to ensure the solution is suitable. Risk is removed by the lockable element, the instructions and key are left with the referring body or locked in a key safe for carers. SGN bulk-buy the device so it costs £11 for the valve and around one hour of engineers' time to install.

Dementia is a difficult subject to deal with, at times the person can be angry, upset or more lucid than others. To assist with dealing with this SGN staff have received dementia awareness training (Quality Commission Approved) which provides them with knowledge and ways of communicating. The previous solution would be to permanently cut off or remove the appliance – or for the person to no longer live independently.

Benefits/impact

- ✓ The service reduces the safety risk to vulnerable people and those around them.
- ✓ It gives friends and families assurance of their safety.
- ✓ Enables continued independent living for the householder without removing the source of cooking.
- ✓ The draw on fire services reduced and also on care homes.
- ✓ It saves SGN going to reports of "smell of gas" where someone has unintentionally left the gas on. This can be a common scenario.

Homeglow Products:

B-Warm

S AF IT QW

Overview

B-Warm is a portable heated seat cover designed to fit most armchairs and sofas. It has the potential to help those with a more sedentary lifestyle due to ill health who suffer with the cold as it can maintain a person's warmth and comfort at lower heating costs. It may provide improved mobility and a supplementary source of warmth for sedentary people, including potentially during gas outages and for short periods of time electricity supply outages.

The Need

Keeping warm and well at an affordable cost is a challenge for the over 65s and for those with a more sedentary lifestyle due to ill health. The B-Warm heated armchair cover has been developed for those who suffer with the cold – the frail and elderly, discharged patients from hospital, or those with mobility problems and suffering from rheumatism. Whilst whole-house heating is the ultimate objective in any home heating regime, low-income and vulnerable people often cannot achieve this, and consequently live in cold uncomfortable conditions, unable to afford to heat their properties adequately. This can result in poor physical and mental health. In addition more mobile household members may not require or find it comfortable to have the home at the higher temperatures needed to keep the more vulnerable person warm.

The solution

B-Warm is a portable heated seat cover designed to fit most armchairs and sofas. It operates with a single control button, producing low level controlled heat with 4 adjustable settings from 10w to 45w. NEA reports it is "relatively simple to install, removable and washable". It can contribute to reductions in overall heating costs and can bring improvements in certain health conditions while aiding comfort. The product has CE marking, and so complies with the essential requirements of the relevant European health, safety and environmental protection legislation. It has a safety and automatic switch-off feature (turning off after 4 hours if the person falls asleep).

It is also possible to run the cover from battery storage in the event of an electricity power outage, with running time dependent on the battery efficiency. It costs £89.95 (incl. VAT) to buy. The manufacturer's estimated running cost: £1.62 per month on the second heat setting (average user, more heat may be used by those also seeking pain relief). The product is a different approach to standard efficiency practice, as it provides direct, individualised heat.



Photo: B-Warm

Where used: SGN and WWU are trialling this. Available on Amazon/online- currently taken up by individuals (3000 had been sold as of October 2017).
Contact: Martin Lewis
Tel: (+44) 01291 672974 / 07855 646670
martin.lewis@homeglowproducts.co.uk
Developed by: Homeglow Products

Piloting: The invention has been piloted by NEA under its Health and Innovation Programme. As a result of Project Inspire, a number of GDNs are also trialling B-Warm during winter 2017/18. For more information on the NEA pilot: http://www.nea.org.uk/hip/

Impact/benefits

NEA assessed this product and made the following conclusions[72]:

- ✓ 4 out of 5 householders made savings on their energy bills
- ✓ When used on a low setting the heat pad may provide improved comfort for those with limited mobility
- ✓ Very cost effective even on its highest setting – less than 0.7p an hour
- ✓ High levels of consumer acceptability

In addition (not assessed by NEA) potentially:

- ✓ An efficient and direct source of heat to sedentary customer during power outages – supporting comfort and peace of mind
- ✓ Fewer accidents due to improved mobility.
- ✓ Improved emotional well-being,
- ✓ Relief of general aches and pains and relieves back pain and helps people suffering from arthritis.



Winner of the International Green Apple Award for environmental best practice



At the point of installation customers should get: advice on the various heat settings, their benefits and costs and the importance of maintaining recommended ambient room temperatures whilst using the heat pad; energy efficiency advice to ensure maximum benefits are achieved. It is also recommended that a home visit is made two or three weeks after installation to ensure correct usage of the heated seat cover and to make any physical adjustments to the position of the heated seat cover where householders are particularly vulnerable.

[72] http://www.nea.org.uk/wp-content/uploads/2017/02/CP1031-TIF-FOR-PUBLICATION-08092017.pdf

Smart Compliance:
The SMART CO Detector

S IT QW

Overview

The SMART CO Detector is a unique remote monitoring system that has the ability to detect carbon monoxide exposure including at low levels and self-check the reliability of the monitor - increasing safety, and reducing false carbon monoxide alarms to networks. It provides tenants/householders, landlords or third parties with peace of mind via remote alerts e.g. by texts/smart phone alert/web portal and a central record of performance.

The Need

Carbon Monoxide (CO) is a colourless and odourless but highly poisonous gas that can kill quickly without warning. It is produced by carbon-based fuel appliances. e.g. those using natural gas, LPG, oil or solid fuel for heating or cooking. People are at risk of carbon monoxide poisoning if heating and cooking equipment isn't properly installed and maintained.

The All Party Parliamentary Carbon Monoxide Group reports that there are around 40 deaths and 200 hospitalisations per year in England and Wales. Also, 4,000 attendances at accident and emergency departments for CO poisoning in England. There are also potentially thousands of people suffering flu-like symptoms such as headache, dizziness, nausea and fatigue without realising the true cause.

Where used: Worldwide. The system is being piloted under Ofgem's Network Innovation Alliance Fund. UK wide pilot project with National Grid, Northern Gas Network and Wales and West Utilities. More than a dozen social landlords including local authorities and universities are currently undertaking 'discovery projects' with the invention.

Problems with the current approach

- Smart Compliance reports that 84% of homes have smoke alarms, whereas only 14% of homes have carbon monoxide alarms.
- Consumers are supposed to test CO alarms every week and clean alarms every 3 – 6 months. Most people don't.
- Current CO monitor devices have operational reliability issues. E.g. they are not able to effectively assess the condition of the CO sensor device that they use, which has a finite lifetime (typically around 5 years). The use of the test button does not test this aspect of the device. This can result in faulty monitors or false readings.

False readings

False readings can lead to unnecessary gas company callouts. Around 40% of callouts are due to reasons other than the presence of CO (e.g. caused by misinterpretation of battery low warnings or faulty CO alarms). These false call outs impose additional costs on Network Licensees, tie up vital resources and incur unnecessary travel which also impacts on CO2 emissions.



Contact: Scott Wallace – scott@ssscontracts.com
Developed by: Smart Compliance Ltd
Potential: The system is available for individual residents and landlords incl. large social housing providers.

The solution

The SMART Compliance system remotely monitors in real-time the actual CO levels in the property, alert conditions, and battery health and sensor health. This information can be communicated to the resident, landlord or a nominated third party e.g. carer or family member both via audible and visual signals. The information can be accessed via a web portal, and alerts sent via SMS and a smart phone App. The monitor also has a local alarm as per current devices if CO is detected. It has a 5-year battery life (comparable to best existing products) and comparable hardware costs to existing CO monitors. In practical terms, from the consumer perspective:

- CO monitors are fitted in any room that is used partly or wholly as living accommodation which also contains any appliance which burns, or is capable of burning, solid fuel.
- CO monitors are the look and size of a smoke alarm, and are installed by the landlord or an agreed third party.
- If there is an alert, the resident will still need to take appropriate safety measures – though in the case of central monitoring e.g. by a landlord or third party an emergency response can be triggered.
- The total cost per property over 5 years is £175, equivalent to only 67p per week.

This invention is:
Winner of the Best Safety Innovation Award at the 2015 Energy Innovation Centre awards



Benefits/impact

- ✓ Direct reduction in ill health and deaths resulting from carbon monoxide poisoning.
- ✓ Installed carbon monoxide detectors are known to be fully functional providing peace of mind.
- ✓ Monitoring of intermediate level carbon monoxide exposure can facilitate diagnosis of health issues.
- ✓ During trials of the system, the smart detector has already saved the lives of two workers in separate incidents in Lancaster and Kirklees.
- ✓ The Smart Compliance detector can alert residents or landlords remotely. This is helpful should the former be away from the premises at the time or if they have impaired hearing. An alert could also be sent to a carer and/or family member by SMS or email.
- ✓ Removes the necessity to perform local weekly tests of the unit as the remote monitoring automatically does this. Vulnerable customers in particular with mobility problems may benefit from the automated checking of the sensor and the monitoring.
- ✓ The Smart Compliance solution supports landlords in complying with their legal duties of care and the logging of all testing in a secure central database and can evidence compliance.
- ✓ Once installed the Landlord does not need to enter the property to receive the data.
- ✓ Network operators should benefit from reduced FCO callouts (elimination of unnecessary, i.e. false alarm, callouts due to non CO related issues with CO detectors, typically caused by low battery condition or sensor faults).
- ✓ Cost savings from:
  - Reduced call outs to false alarms.
  - Including staff, gas engineers, service providers and admin.
  - Additional savings if the emergency services are considered.
  - Reduced requirement for forced entry to service boilers.
  - Potentially reduced cost of insurance.
  - Reduced healthcare and fatality costs.
  - No need for precautionary detector replacement.



SGN:
Neighbourhood Alert



S AC IN QW

Overview

This is a secure alert and community messaging system that allows SGN and other authorised agencies such as the police, fire and rescue service, the Council and community organisations to send safety messages (alerts, advice, information) to registered people and organisations in the community. It offers an easy way to help people and those they care for to have up to date information and advice to help them feel safer and stay safe all year round. It helps to build community collaboration and resilience by facilitating partnership working. It can help prevent problems and enable a faster and more tailored response for vulnerable customers when emergencies happen.

The Need

It is important to prevent safety problems and enable and empower communities to be better prepared and able to respond to, and recover from any crisis affecting them e.g. flooding, snow, loss of gas or electricity supply. Customers also welcome being kept up to date of the progress being made in fixing things when there is a problem. Some people may need particular reassurance to feel safe even when incidents aren't occurring. Gas networks do not tend to have customer names or telephone numbers – directly contacting residents can be difficult and the company has to rely on use of their website, twitter and blanket letters – the latter of which are relatively slow and expensive.

The Solution - www.sgnalert.co.uk

The Neighbourhood Alert system gives updates and advice to registered people on useful safety issues such as crimes, bogus callers, road closures, weather issues. With SGN customers it can also provide information and advice on gas outages, gas safety, and other incidents in their area. Customers self-register for the Alert online, or carers, including children over 11 can do it for them.

The user highlights the organisations they are interested in receiving alerts from and personal data is not shared without permission. The service is free. People can choose whether they receive alerts and information by text message, voice message or email, increasing its accessibility. You can register if you don't live in the area, helping those who live a distance from loved ones keep a check on what is going on. People can tailor the information they receive to their interests so it is relevant e.g. dog walking updates.

Where used: SGN. Also Neighbourhood Alert, Neighbourhood watch, Home Watch Network, UK Police forces, Scottish Borders Alert, Rural Watch Scotland, Perth & Kinross Community Watch, local authorities and public sector.
Contact: Linda Spence - 07580 94642
linda.spence@sgn.co.uk
Caroline Lawrie – 07747 757799
caroline.lawrie@sgn.co.uk

Developed by: VISAV Ltd
Launched: SGN went live south of England in November 2016 and Scotland February 2017.
Potential: Any utility could use it.

Impact/benefits

- ✓ SGN's Alert went live in its southern area November 2016 and Scotland in February 2017. It's still early days for this but feedback is positive. More than 4,000 people are signed up to the Alert –this includes 3200 SGN customers (as of April 2017).
- ✓ It's a one-stop shop for safety advice and local alerts from a range of agencies. Those that register for this Alert get early warnings, advice and information which can help them and those they care for stay safe.
- ✓ The SGN Alert was created as a messaging system for everyone, however upon registration a user can select a number of vulnerable categories, set up by the company behind the Alert. This has no direct link to SGN's needs codes or PSR, but does mean SGN can target a particular group if they need to.
- ✓ As a result of registering, elderly and vulnerable customers are more likely to get proactive and timely support when things go wrong. Community organisations, who are often the first to respond in emergencies and have local knowledge, will also be aware the household needs support. For example, in a loss of supply incident in Bramley SGN were able to update those registered immediately when they knew there was a problem with the gas supply, which meant they didn't have to make unnecessary calls to their gas supplier, council etc. Local care agencies were also alerted immediately through the system which enabled them to mobilise quickly to support those registered with particular needs.



- The resource involved in using the Alert day to day from SGN's side is minimal. To use it only requires one person to go in and search for an area and send out a communication.
- There is investment in buying the licence from VISAV – cost implications £10k.
- It's important to on-goingly promote and build awareness and take-up of the service.
- It's essential to have good communication and understanding with partners.

Safety and peace of mind – good and innovative practice case studies:

BT – Protective Services Scheme

IN S AF QW

Contact: Gav Barang - gav.barang@bt.com

Under BT's Protective Services Scheme a customer can nominate a third party who will be contacted if the company can't get in touch with the customer or the bill goes unpaid. The person isn't liable for the bill but it means the customer doesn't receive chaser communications because for example they've fallen ill, are away, in hospital, suffering from depression. They are then taken out of the debt management process that can result in multiple reminder messages and calls, with ultimately outgoing calls barred and disconnection. The service is available to any customer. It has been promoted via a range of media including BT's inclusion website, in 20 million phone books, more than 5 million customer bills, communications to health and social care professionals, and events among other channels. The company reports that it is easy to implement. This could be adopted by any energy supplier.

BT – Power of attorney

G QW

Contact: Gav Barang - gav.barang@bt.com

BT has developed Best Practice in the area of Power of Attorney. Anyone can potentially be in a situation where they need other people to make decisions or take action on their behalf. Independent evidence from the Office of the Public Guardian (OPG) points to difficulties for customers in vulnerable situations and their representatives because of uneven industry practice, inconsistent services, and a lack of awareness, training and skills among operational staff of dependency arrangements. Most companies only recognise two main powers of attorney – enduring and lasting power of attorney. BT has a much more comprehensive approach recognising around ten. This includes 'Appointeeships' where someone may have poor literacy or numeracy skills and need help with their social security benefits.

BT – 24 hour free fault repair

IN S

Contact: Gav Barang - gav.barang@bt.com

BT offers a free 24-hour priority fault repair service for customers with chronic long-term illness or disability who are unable to leave the house without assistance. There is an application form to complete that needs to be countersigned by a doctor or hospital consultant.

NGN – Have you found the killer yet? Smart phone apps/games

IN S

Contact: Tom Bell – tbell@northerngas.co.uk
www.ngngames.co.uk

NGN developed an innovative and interactive gaming app – Have you found the killer yet? . This was in response to Gas Safety Trust research which showed that 18-24 year olds are particularly vulnerable to CO poisoning due to lack of awareness. The app has been downloaded more than 35,000 times and out of the responses to a quiz at the end of the game (2015), 80% said that they had excellent knowledge of CO after playing the game and 60% said they would purchase a CO alarm. The quiz highlighted that 25% didn't think CO presented a danger outdoors. GDNs have subsequently collaborated to cover these additional risks with the launch of iFEST – a game to raise awareness of the dangers of outdoor scenarios esp. festivals and camping.

Uber – Peace of mind for home visits

IT S

Many people, particularly the elderly and those with mental health problems, worry about people coming to their door. This is why energy companies are required to offer password schemes for home visits by field staff such as meter readers, and smart meter installers for customers that want them. With Uber, when a customer orders a taxi they are sent information on their phone that includes the drivers name, photo, vehicle make and licence plate number. They can also track where the driver is so they know how long it will be until they arrive. The customer also has their contact details so they can call them if they need to. Drivers also have to ask for the person by their name when they arrive. The same approach could be used by energy companies for home visits to increase safety and peace of mind for those with smart phones. For elderly people with poor mobility knowing when the driver will arrive enables them appropriate time to be near the door to let them in.

iViTi ON Safety Light Bulb

IT S W

Where used: SSE Power Distribution, Scottish Power, Western Power Distribution, and Northern Powergrid are piloting.
Contact: Trefor Jones - trefor.jones@iviti.co.uk 07718 560372
Developed by: iViTi Lighting Limited.
Launched: Feb 2017

Overview

iViTi ON Safety Light Bulb automatically provides up to three hours of light during a power cut and can switch to and from battery mode during times of network stress, helping to keep the lights on for all.

The Need

When lights go out it can cause household members anxiety and inconvenience, particularly for the most vulnerable. Use of candles, can cause fires whereas working torches may not always be readily available.

The Solution

iViTi ON is a power cut safety light bulb. Each bulb gives the same amount of light as a standard 60w bulb but with the benefit that should there be a power cut, the bulb will continue to provide light for up to three hours. iViTi ON can be switched on and off as required during the power cut. The bulb is bright and as easy to use as a standard light bulb. It uses LED technology making it energy efficient. There are no additional attachments or special wiring needed. Its 'smart' capabilities can tell the difference between switching the lights off and a power cut. During a power cut the bulb automatically switches to using the battery. Once the power is back on the battery starts to recharge itself. There are two light settings and a two-year guarantee.

Western Power Distribution – Power Cut App

G QW

Contact: Alex Wilkes
awilkes@westernpower.co.uk
Tel: 07912 098826

This mobile App allows customers to report a power cut and receive updates. It also provides access to information on all power cuts in their area and advice on what to do if this happens. It was originally launched to allow customers to register for updates at an individual property. However, acting on feedback from Local Resilience Forums, multiple properties can be registered to a single person or business e.g. social landlord or carer.

Western Power Distribution – Power Outage Devices

IT S W

Contact: Alex Wilkes
awilkes@westernpower.co.uk
Tel: 07912 098826

Western Power Distribution is trailing power outage devices, which notify in real-time when vulnerable customers go off-supply. 250 devices have been installed in social housing in an area with higher than average power cut rates, in off-gas areas dependent on electricity for power and heating. Customers will also receive advice and support to help tackle fuel poverty and improve their ability to cope in the case of an outage. The aim is to learn how Western Power Distribution can better target and support households who are susceptible to higher than average power cuts as well as test internal processes and procedures ahead of smart meter introduction and the rollout of last gasp.

Safety and peace of mind – smarter world case studies (see Section 8)

There are a number of innovation case studies in the smarter world section of this report, which could also improve safety and peace of mind for energy customers and their friends and families:

- Utilita's Smart Prepay Self-disconnection Support p.154
- CSE's Smart and Snug fuel poverty tool p.157
- EDF's Howz connected homes solution p.161
- Liverpool John Moore's and NHS Merseyside's health monitoring p.162
- The Sensor Platform for Health Care in a Residential Environment p.163



Guide 4:
Affordability

Guide 4: Affordability – supporting customers on low incomes and in debt

Regulation/need

Energy companies are required to support households in fuel poverty and those who are struggling to afford their energy bills in a variety of ways.

Customers in debt

Under supply licence conditions and the **Principles for Ability to Pay (2010)** suppliers are required to:

- treat customers in debt fairly and not mislead them.
- make proactive contact with customers to prevent debt build up.
- agree payment rates that are understood by and affordable to the customer.
- monitor debt repayment rates.
- offer domestic customers struggling to pay their bills a range of payment options including via prepayment, payment by regular instalments through means other than a PPM; direct payments from the customer's social security benefits (such as Fuel Direct or Universal Credit).
- provide energy efficiency advice free of charge to help reduce fuel costs if the customer requests it.

How and the degree to which suppliers comply with these regulations varies. For example, Ofgem has highlighted that financially vulnerable customers would benefit from more proactive energy efficiency advice[73]. There are also licence conditions in place to prevent **disconnection** of certain vulnerable customer groups during the winter months (October to March)[74].

Prepayment meter customers

Prepayment meter customers have relatively high levels of vulnerability[75]. The Debt Assignment Protocol, while not widely used, enables prepayment meter customers with a debt up to £500 to switch supplier and therefore access cheaper deals. More recently the **prepayment price cap**, limits how much a supplier can charge a prepayment meter customer per kWH, and is designed to cut bills for up to 4.5 million prepayment households[76].

[73] Vulnerable consumers in the retail energy market: 2017 report
[74] During winter months (October to March) suppliers are prohibited from knowingly disconnecting consumers of pensionable age (if they live alone, with other pensioners or with children). Suppliers must also take all reasonable steps during winter to avoid disconnecting premises where there is someone who has a disability, a chronic sickness or is of pensionable age.
[75] Prepayment review: understanding supplier charging practices and barriers to switching, Ofgem, 23 June 2015
[76] https://www.ofgem.gov.uk/consumers/household-gas-and-electricity-guide/understand-your-gas-and-electricity-bills/energy-plans-what-prepayment-meter-price-cap-or-safeguard-tariff

Suppliers must report on their performance against the prepayment and debt licence conditions, and this, along with good practice is published in Ofgem's Vulnerable consumers in the energy market report (previously their social monitoring report).

Voluntary schemes

A number of suppliers are also signed up to the **Energy UK voluntary code of practice, the Safety Net[77], and their Prepayment Principles[78].** The former is intended to prevent disconnection of vulnerable customers at any time of year and provides a commitment to reconnect customers who are subsequently identified as vulnerable as a priority and usually within 24 hours. EUK plans to create a new **Vulnerability Charter** in 2017/18, which will consolidate these commitments alongside a new set of voluntary commitments designed to improve standards of care for energy customers in vulnerable circumstances.

Wider support

- Under the government's **Warm Home Discount** scheme suppliers with more than 250,000 domestic customer accounts (gas and electricity) provide electricity bill rebates – currently worth £140 – and indirect support to low income consumers. Over 2 million customers currently benefit[79]
- The **Energy Company Obligation** (ECO) also requires companies with more than 250,000 customer accounts to install energy efficiency improvements in households, including in low income and rural areas.
- The current **prepayment safeguard tariff** is expected to be extended to a further one million households who receive Warm Home Discount in winter 2017/18. These households will save an estimated £120 a year on average[80].

Network obligations and incentives

Under the RIIO – GDI Gas Distribution Networks must deliver the **Fuel Poverty Network Extension Scheme (FPNES)**. FPNES allows customers to access natural gas (a relatively cheaper fuel) by helping towards the cost of the connection to the gas network. It provides funding for single properties as well as communities like villages and flats to connect to the gas network.

Network incentives also enable companies to earn additional revenue. In electricity the annual Stakeholder and Consumer Vulnerability Incentive includes a specific element for initiatives supporting vulnerable customers – much of which is focused on fuel poor households. In gas, the stakeholder incentive performs a similar role. In addition the Gas Discretionary Reward Scheme has an explicit social action incentive, which has prompted a range of action to help tackle fuel poverty.

[77] The Energy UK Safety Net- Protecting Vulnerable Customers from Disconnection, Energy UK, February 2016
[78] Energy UK PPM Principles, Energy UK, October 2016
[79] Warm Home Discount Annual Report 2015-6, Ofgem, November 2016
[80] Statutory consultation for a vulnerable customer safeguard tariff, Ofgem, 11 October 2017

Standard practice – customers in energy debt and using prepayment

In addition to the service outlined above, the following is also common support offered for customers struggling to afford their bills. Not all companies offer these services but a number do:

- **Trust funds and hardship funds** to help customers struggling with their bills. Sometimes these are used to clear a debt completely. These can be open to all customers (e.g. British Gas Energy Trust, E.ON Energy Fund) or the company's own customers (e.g. npower Energy Fund, Ovo Energy Fund, Scottish Power Hardship Fund, SSE Priority Assistance Fund). The EDF Energy Trust is open to EDF Energy customers but other debts, including monies owed to other energy companies, will be considered in the application process.
- **Two-way referral networks** in place with debt advice agencies and other support organisations such as StepChange, Money Advice Trust, local Citizens Advice offices and grass roots charities. These provide direct, impartial financial support and advice. These kinds of third parties may also: help customers better manage their energy use; carry out **benefits maximisation** checks; and provide support with resolving problems with welfare benefits.

<u>For suppliers only:</u>

- For **prepayment customers** (though not adopted by all suppliers in particular smaller suppliers):
  - **Not charging** customers for the installation and removal of prepayment meters
  - The provision of **emergency credit** – If the prepayment meter runs out and the customer doesn't have any money on it the company provides an amount to tide them over. E.g. £5 or £10 and the customer pays this back the next time they top up.
  - **Friendly credit** or no-disconnect periods for electricity – these are periods when customers remain on supply even if their emergency credit runs out and they have no money on the meter. E.g. at night times or during bank holidays when top up points may be closed.
  - **Monitoring customer's top-up activity** – to ensure customers are not self-disconnecting, though the quality and frequency of monitoring is arguably not as effective as it could be.

Affordability – The Winning Innovations



- **Gold** SSEN Energy Efficiency Funding Gap
- **Silver** nPower Fuel Bank
- **Bronze** Utilita – Smart Prepay Self-disconnection Support – see p.154
- **Bronze** CLP – 'Power your Love' – Save Energy Light up Lives

The award winning innovations outlined above were short-listed as part of Project Inspire and voted on by an independent panel of judges at our *Energy for All, Innovate for All* event in April 2017 (see p.24). The judges were:

- Citizens Advice – Jake Beavan
- NEA - Danni Crosland
- National Right to Fuel Campaign – Hugh Goulbourne
- Scope – Minesh Patel
- StepChange – Alison Blackwood



It should be noted that there was not always agreement on what *was* deemed to be good practice and effective innovation. Some of our award-winning innovations split the judging panel/the wider audience.



SSEN:

Energy Efficiency Gap Funding

AF AC IN

Overview

SSEN's 'gap funding' scheme pays for the preparation work needed for energy efficiency measures to be installed in fuel poor households that other schemes don't fund. This is a well-targeted, very cost effective scheme that enables fuel poverty measures to be installed in some of the most vulnerable households that might otherwise not be able to have them.

The Need

Sometimes, while fuel poor customers are eligible for energy efficiency measures such as ECO, installation may not progress as there is a gap in funding as nobody funds the preparation works needed; e.g. to have loft insulation you need a clear loft, to install a new boiler you need easy access to all the pipework, and to start injecting cavity wall insulation you need to be able to get to the walls all round the property.

Whilst fully fit people may be able to do these preparations themselves, elderly customers, or people with disabilities or mental ill health often cannot prepare their homes ready for the work. Also, those on low incomes almost certainly can't afford to pay for someone else to do the work for them as these energy efficiency measures are normally means tested.

This all means that the most vulnerable customers can be excluded from getting this work done which would save them hundreds or thousands of pounds and help keep them healthy and well.

The Approach

SSEN work with partners Warmworks (a joint venture between the Energy Saving Trust, Everwarm and Changeworks) to deliver the Scottish Government's national energy efficiency scheme, Warmer Homes Scotland to address this problem. The process is simple. SSEN make funds available upfront for their partners. The partners administer the scheme and own the relationship with the customer. The third party also manages the contractors and oversees the process. There is no need for the customer to fill in additional forms, contact SSEN, or even for them to know they are getting additional help from the company. This removes any stigma that could be attached to additional funding and increases the acceptance rate from customers. All a customer sees is the local contractor arriving earlier than normal and being able to do everything required from start to finish with the minimum of fuss.



Where used: SSEN. Operational since June 2016 in Scotland. Work in progress for three locations of southern England.
Contact: Simon O'Loughlin at SSEN
simon.o'loughlin@sse.oco.uk Tel: 01738 453193

Developed by: In Scotland, SSEN and Warmworks. For southern England Warm Zones (part of NEA) and the Centre for Sustainable Energy with Wiltshire and Dorset County Councils.

Potential: Any energy company could do this but it may be harder in England than Scotland see 'Lessons Learned' below.

Why innovative: As far as we are aware no other energy company is doing this.

Benefits/Impact

- ✓ Gap funding allows all eligible customers access to the energy efficiency measures they are entitled to. Consequently it helps customers on low incomes to save people money, make them more comfortable and warm in their homes, and reduce carbon emissions.
- ✓ **For every £1 spent there is £30 benefit to the customer.**
- ✓ Up to the end of January, 49 measures had been installed for 34 customers, saving them each an average of £607 per year in fuel bills.
- ✓ Recipients have also benefitted from an average gain of 15.5 on SAP ratings and collectively will save 3.7 tonnes of CO2 a year.
- ✓ The lifetime cost benefit ratio on these installations is massive, so far SSEN has invested £10,750, but the estimated lifetime savings customers will make from this outlay is over £330,000.
- ✓ Benefits to the local economy from paid jobs. Gap funding enables installers to do the work for customers. These installers are local plumbers, insulation companies, gas and electrical engineers that have previously had to refuse the work. Also NHS savings from customers not being admitted to hospital.



- Gap funding is easy to do if you have a trusted partner to work with who already manages energy efficiency schemes and deals with installation companies.
- Good communication is required with your partner to launch the scheme and make it effective. It can take some time to take off but will be very rewarding in the end.
- Gap funding may prove harder to administer in England than Scotland. This is because Warmworks are able to project manage the energy efficiency works from start to finish including funding.
- The return on investment may not be as high in other areas of the UK. This is because SSEN's north of Scotland area has large numbers of properties that are off gas grid, meaning they stand to save more on heating bills than a customer heating with mains gas.

Case study – Miss H

Miss H lives in rural Aberdeen. She retired early on medical grounds and lives alone. Her property had a SAP rating of 35 or band F. A survey showed her home would benefit most from secondary glazing, draught-proofing, a new boiler and a new heating system. However to have these installed lots of heavy furniture needed moving and Miss H simply couldn't do that or afford for it to be done on her behalf. Warmworks used SSEN funding to remove and replace the furniture. Her property is now a band D SAP rating (a 31 point improvement), saving Miss H £400 a year.



npower:
Fuel Bank



S ID AF AC IN

Overview

npower Fuel Bank™ uses the existing Foodbank network and referral system to provide emergency top-up vouchers to Foodbank users with a prepayment meter, and who are in fuel crisis (regardless of who supplies their energy). The vouchers provide around two weeks' worth of emergency fuel to cook their food and heat their homes at no cost to the client. The scheme is extremely simple and quick for both administrators and recipients.

The Need

Many Foodbank users are experiencing both food and fuel crisis (where they cannot afford to buy food or pay for their energy), and if they have a prepayment meter they may be forced to self- disconnect (they don't top up their meter, therefore having no access to gas or electricity). This leaves people without access to basic needs such a hot meal, or a warm shower, or even light and many foodbank users were unable to cook the food they are given. The standard supplier response for prepayment meter customers in financial difficulty is to put credit on the meter e.g. a wind-on. This provides temporary help but the money must be repaid.

The approach

The npower Fuel Bank™ was designed to use the existing Foodbank referral process and a key eligibility requirement is that recipients are in food crisis, so only individuals with a valid Foodbank Voucher for the Fuel Bank™ location are eligible.

1. Individuals are identified as being in food crisis by care professionals, such as Citizens Advice Bureaus, GPs, social workers or police, and issued with a Foodbank voucher to redeem at their local Foodbank.
2. If the Foodbank is part of the Fuel Bank™ scheme, the Foodbank will assess their eligibility for a fuel voucher of £30-49 and complete an application on their behalf.
3. The client will be provided with a booklet outlining key contact numbers, as well as information on other schemes and sources of longer term support with their energy costs.
4. A Fuel Bank™ voucher will be issued to the client via text message or email, usually within 24 hours.
5. The code can be used straightaway at any PayPoint retailer to be redeemed against electricity and/or gas using their pre-payment key or card.
6. The credit will appear on the meter when the prepayment key or card is inserted

The application for a voucher is made as they collect the emergency food parcel in the Foodbank and allow many clients to cook the food they are given, as well as provide the access to the basics that are often taken for granted – such as a hot shower, and a warm house.

Benefits/impact

More than **26,000 vouchers** have been issued across the npower Fuel Bank™ network since the pilot was launched in 2015 (to April 2017), helping over **56,000** people to date. Research into the impact and effectiveness of the scheme have showed that the direct benefits to those in receipt of a fuel voucher are:

- ✓ Helping those who had self-disconnected from their energy supply to reconnect.
- ✓ The prevention of self-disconnection where emergency credit was already being used.
- ✓ The ability to repay emergency credit and charges accrued during periods of self-disconnection or use of emergency credit, therefore enabling access to fuel when credit is applied.

Other, indirect, benefits were also identified:

- ✓ The freeing up of money in other areas of household budgets to help repay or gain control over other debts or areas of expenditure.
- ✓ Providing much needed relief for those experiencing stress and anxiety worsened by their energy and wider financial difficulties.
- ✓ Enabling families to have greater access to essential purchases frequently taken for granted by many. This included, but was not limited to: hot meals, clothing and giving children a warm bath.

In addition for partners and the supplier:

- ✓ The Trussell Trust: are able to expand the services they offer to support their aim of reducing poverty. Foodbanks: by being able to offer the Fuel Bank™ support, they can provide a wider range of support to their clients. Managers have described it as having 'another string to their bow'.
- ✓ Public Interest: the scheme has raised the profile of the issue, as well as quantified the scale of the fuel crisis problem providing a sound evidence base for remedial action to be taken across the industry and other sectors.

Where used: npower. Available to foodbank clients who have a prepayment meter, and are in fuel crisis. It has been rolled out across the UK, based on a wide geographical spread and indices of deprivation.
Contact: matthew.cole@npower.com.
Tel: 07989 493 404

Developed by: npower, The Trussell Trust, NEA, with support from independent Food Banks in Glossop
Launched: The scheme was piloted in 4 Trussell Trust Foodbank areas from April 2015, and was expanded to an additional 10 npower funded locations in April 2016.

Potential: The scheme could be scaled by any energy company. Scottish Power also exploring.
Why innovative: No other organisation in the energy sector provides this type of emergency fuel support, in a 'supplier neutral' way. The npower Fuel Bank™ scheme also uses SMS to deliver the majority of vouchers – providing a rapid response to the need of the client.

For more information:
http://www.nea.org.uk/wp-content/uploads/2016/02/NEA-2015-FuelBankEvalReport.Summary-v5-FINAL.pdf

Video link:
https://www.youtube.com/watch?v=OpCWKbxen6o

We've had mothers coming here after doing the school run, to have a bit of warmth, unable to go home because their houses are freezing. People are faced with the choice of buying food or heating their home, some are unable to do either. The Fuel Bank™ allows us to give that much more immediate help. It's not just topping up their gas and electric, it's giving them their dignity back: they're able to go home and have a hot meal, have a hot shower, as well as heat their homes.

Michele Lawrence, Manager of Brent Foodbank



Photo: Dawn Butler MP for Brent Central with Matt Cole from npower and Michele Lawrence from Brent Foodbank

We often get people coming to us asking if we have anything they don't need to cook because they are experiencing fuel crisis and don't have enough money to top up their meters. For a while our volunteers had been giving people the odd fiver to put on their meter, but we couldn't sustain that. When people come to the Bellies not Bins programme [which refers people into the Foodbank] they often have a crisis happening in their lives and are finding it difficult financially. The Fuel Bank™ allows us to give people food they can cook, and extra financial support for their energy costs, meaning they have some extra cash to get out of other debt they might be experiencing.

Pat Javanaud, Project Manager at G52 Bellies Not Bins

LESSONS LEARNED

- Following a Fuel Bank™ pilot review by NEA, a few key changes were introduced to the process to improve the user experience. These included: Introduction of a helpline for Fuel Bank™ clients and Foodbanks and; introducing two set voucher values across the year, to fluctuate with the change in seasons and corresponding energy use.
- There are currently around 400 Foodbanks in the Trussell Trust network – with even more independent Foodbanks providing support to people in income crisis. Fuel Bank™ addresses a symptom of this issue, but is not a cure. Limited funding means Fuel Bank™ cannot be operated in every Foodbank and therefore limits the help that can be provided.
- It is important to ensure that the backend processes are as cost effective as possible, so that as much of the funding available goes towards client vouchers.

AF IN

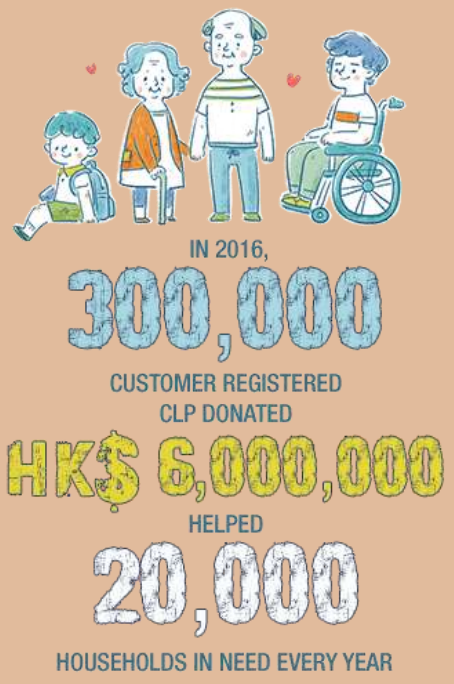
CLP: Power Your Love ‘Save Energy Light Up Lives’

Overview

The Power Your Love initiative supports customers on low incomes while simultaneously encouraging high-energy users to be more energy efficient. For every set amount of energy reduced by customers signed up to the scheme, a corresponding amount of financial support is given to energy customers in financial difficulty.

The Need

The programme is designed to support underprivileged households to relieve their electricity costs, including elderly people, the disabled, families living in sub-divided flats and the families of boarders in special schools, while also encouraging energy efficiency.



Where used: CLP Power in Hong Kong:
Contact: Anissa Cheng, anissa.cheng@clp.com.hk
Developed by: CLP Power.
Launched: 2015 – yearly summer initiative

The approach

Customers register to save energy during a two-month period in summer. They can do this online or over the phone. Those who enrol are invited fortnightly to join the energy saving mission through a hyperlink in an email. They are then entered into the Power Your Love Lucky Draw (five lucky draws in total) with the chance to win home appliances and cookware. Total value of all the lucky draw prizes amount to over HK$120,000. For every unit of electricity saved compared to the same period last year, CLP Power will donate one unit of electricity to households in need. This is up to a maximum of HK $6m (around £620,611). Special prizes are arranged including the Super Energy Saving Award. The initiative is well promoted online and offline. They also have a wide range of corporate support. For more information:
https://www.clp.com.hk/poweryourlove/?lang=en-US

Benefits/impact

More than 200,000 customers took part in the inaugural campaign in 2015 and 300,000 customers participated in 2016. Customers have saved a total of 12.5 million units of electricity to offset the power bills of underprivileged households in the first two years of the programme, benefiting around 20,000 households in need each year. Each beneficiary household received a grant of HK $300 from a HK $6m CLP Shareholders fund. Recipients are nominated by district councillors from 14 districts in CLP’s service area and non-governmental organisations.

Potential: This approach only works with smart meters and a company that has access to the electricity consumption of customers. The company would also need an appropriate incentive to reduce energy consumption. However, the concept, in terms of the behaviour change driver is arguably transferable to some GB customer segments.
Why innovative: As far as we are aware no energy company has rolled out a programme of this nature on a large scale in GB.

Affordability - good and innovative practice case studies

BG/CLIC Sargent Partnership:
supporting families with children with cancer

ID AF AC IN QW W

Where used: British Gas in GB
Contact: Steve Brogden – steve.brogden@britishgas.co.uk
Developed by: British Gas in partnership with CLIC Sargent, a leading cancer charity for patients under 25.
Launched: Feb 2017

Potential: Any customer facing utility could do this.
Impact: 10 families who have children who have been diagnosed with cancer, have been helped (February-June 2017). The support provided so far has included adding the clients to the PSR, exchanging PPMs to credit to remove the burden on remembering to top up and referrals to the British Gas Energy Trust and energy efficiency advice.

Overview

British Gas (BG) has a partnership with CLIC Sargent to develop and deliver a referral and support package to help families who have children with cancer, who are struggling with the financial impact of cancer. This provides timely and preventative support.

The Need

BG estimates that 1,000 of its families a year go through childhood cancer. When a family has child or young person diagnosed with cancer it can not only be emotionally devastating, but can cost an average of £600 extra every month. Many parents in these circumstances give up work while treatment is going on, they may move out of their homes to go and stay near the centre where their child is being treated. When the child comes home they may need to heat the home to a high temperature around the clock while the child is recovering, so these families may have income problems, struggle to keep on top of their bills and other paperwork, and use a lot of energy.

The Approach

CLIC Sargent has social workers embedded at all the children's cancer centres around the UK so has a reach into 95% of children who get a cancer diagnosis and 70% of young people under 24 who get a diagnosis (as some young people get sent to adult cancer centres for treatment). Once a diagnosis occurs the family is automatically referred by CLIC Sargent to a CLIC Sargent specially trained member of staff at BG. BG offer a tailored package of support which includes options such as: a named account manager; benefits entitlement check; payment breaks if required; checking the customer is on the cheapest tariff; provision of energy efficiency advice and review of the household's eligibility for BG social support and energy efficiency measures.

Lessons learned

Planning and regular contact between the organizations was key. Prior to going live, the process was impact assessed to ensure that adequate resources including training were in place. As the referral partnership is now live, regular calls are still ongoing to talk around case studies, any issues and areas of the process that can be improved, as well as looking into the future for opportunities to promote the partnership.

CLP Power, HongKong – E-Autopay reminder

G AF

Contact: Anissa Cheng
Anissa.cheng@clp.com.hk

To ensure customers always have sufficient funds in their bank account to cover their next bill, CLP Power Hong Kong offer an email Autopay Reminder service so the customer receives an email two days before their payment due date. If the customer has two accounts with identical payment due dates and receives their bill at a single email address, they can get a single eAutopay reminder – making it easier for them to check and manage all their accounts. Customers can sign up online. The initiative is beneficial to both the company and the customer. It means the payment is less likely to bounce, minimising any associated chasing, and the customer is less likely to incur banking fees if they have insufficient funds in their account.

Go Cardless – Flexible billing

IN G AF

Contact: Nicki Cho nicki@gocardless.com

Bulb uses GoCardless to provide more flexible billing. GoCardless technology provides real-time alerts when payments fail or Direct Debit mandates are cancelled, allowing Bulb to get in touch with customers immediately and handle the problem, preventing debt build up. Customers can choose for payments to be taken on a particular day of the month and can request changes to their payment plan, which Bulb implements within three working days. GoCardless' simple but advanced technology also enables Bulb to keep down admin costs, so they can pass on further savings to customers.

E.ON Germany:
Payment Help Program

ID AF W

Developed by: The approach was developed as part of a consumer-centric design process, with consumers, Job Centres and welfare organisations. E.ON sought to understand the causes of energy debt and worked collaboratively with customers and those supporting them to develop solutions.

Contact: Sandra.turner@eon.com

Overview

E.ON Germany works in partnership with welfare organisations and Job Centres, so that when a customer becomes unemployed they can take proactive action to support them in managing their energy use, and reduce or prevent energy debts.

Benefits

Last year around 10,000 referral calls were made between the Job Centre and E.ON. A full evaluation of the approach has not yet been complete but initial feedback suggests:

- ✓ Better repayment of debt (so less bad debt) from those on long-term payment plans
- ✓ A reduction in disconnections
- ✓ Positive feedback including from staff and the local community.
- ✓ When Job Centre or welfare organisations use the special hotline, in most cases find help.

How it works

When an E.ON customer in financial difficulty contacts the Job Centre, the Job Centre can call E.ON on the customer's behalf, (or the customer can call themselves) via a dedicated hotline manned by a specialist team. Customers who come via this route get a preferential service: payment help, including the option of longer repayment terms; energy saving advice; debt advice information; and any debt escalation action underway e.g. disconnection, is cancelled. The advice line works in both directions with customers in financial difficulties also referred to the Job Centre and wider welfare organisations for additional support.

E.ON distributed the hotline number to 315 Job Centres in the federal states where E.ON is the basic electricity supplier. They also distributed the number via the umbrella organization AG SBV (debt counselling & welfare organizations).

NGN – Learning to Live Independently

G AF W

Contact: Tom Bell – tbell@northerngas.co.uk

Learning to Live Independently is a two-year programme between NGN and The Children's Society. It targets 900 teenagers who are about to live independently for the first time. The programme provides these young people with money management skills as well as advice and support about maintaining a healthy lifestyle.

Affordability – smarter world case studies (see Section 8)

There are a number of innovation case studies in the smarter world section of this report, which could also improve affordability and support energy customers in financial difficulties:

- geo's Hybrid Home p.156
- Utilita's Smart Prepay Self-disconnection Support p.154
- CSE's Smart and Snug fuel poverty tool p.157
- Flipper's automated switching service p.164
- VCharge/Ovo's Dynamo to optimise electric storage heaters p.165
- Switchee's Smart Thermostat p.166

6 Stakeholder views on vulnerability innovation

This section summarises the frank and anonymised views of our 66 interviewees and 9 survey respondents. It outlines their thoughts on: the value of innovation; the extent to which companies want to and in practice share innovation; the effectiveness of the current framework; barriers to vulnerability innovation where intervention may be needed; and importantly what works in driving innovation for those with additional needs. It includes a diverse range perspectives including from:

- Energy companies - energy suppliers, networks and Energy UK
- Consumer voices - consumer groups and disability organisations
- Supply chain innovators – business to business product manufacturers, service providers and their industry associations
- Public sector voices including regulators
- Others – consultants, communications experts working in the energy sector, academics.

Temperature check: views on vulnerability innovation today

While the picture is mixed, there is a clear view that networks and larger energy companies have improved how they support customers in vulnerable situations in recent years. In particular companies' understanding of the different kinds of vulnerability and identification of vulnerability is getting better.

Notably, a number of consumer representatives who have worked directly with energy companies feel that "there is more activity going on in energy than in other sectors, especially for those on low incomes, but that people are not aware of it".

However, most improvements are seen as "incremental" rather than "genuinely radical or innovative". As one industry representative put it: "innovation is relative. At the moment, for most of the industry it's about getting some pretty basic stuff right. There are some pockets of innovation to support vulnerability but I don't see any company getting a particularly high score yet."

There is a general sense that there is much more that can be done, and will need to be done, especially with the smart meter rollout and 24 hour switching which will create new challenges for all customers but especially vulnerable customers.

Most respondents recognised there is significant variation in innovation between different energy suppliers with some consumer representatives stressing that it was important to differentiate and "not to tar all energy companies with the same brush."

Medium and smaller energy suppliers, in particular are seen as generally poorer at innovating to meet the needs of vulnerable customers while "some are not even thinking about vulnerability". This is a view that is supported to some extent by the findings of Ofgem's Vulnerable consumers in the retail energy market report[81]. Utilita, who are a specialist smart prepay provider, were cited as an exception by some consumer representatives who viewed them positively.

[81] For example, in terms of treatment of customers in debt the report found that: on average, 27% of indebted customers are on repayment plans with small and medium suppliers compared to 62% of customers with large suppliers. Customers repaying debt via a credit payment method with some small suppliers paid back on average three times more per week towards their debt than those with large suppliers. The regulator concludes that – "some suppliers, predominantly small and medium suppliers – must do more early on to identify customers in payment difficulty and prevent debt from building up".

There were mixed views on local authority suppliers with explicit social aims, with some feeling there is a gap between their social ambitions and where they are in practice in terms of delivering for vulnerable consumers. This is largely seen as resulting from a lack of understanding of inclusive processes and general vulnerability related knowledge and skills.

The balance of views including among consumer and disability advocates, was that networks are marginally more innovative than suppliers, but with fewer companies at the extremes (either excellent or bad) than suppliers. Networks felt they do not always get credit for the very real differences in levels of innovation between them. Indeed some non-network interviewees rightly or wrongly, saw networks as "much of a much-ness" in how they have gone about vulnerability innovation.

Some consumer interviewees were more cynical, suggesting there was a disconnect between company's rhetoric on vulnerability innovation and delivery. In particular, they felt that despite "all the noise" that there has been relatively little genuine smart innovation to support customers in vulnerable situations. As one put it "there is more suggested than achieved" and "companies approaches to data have not moved on" despite the opportunities.

Others queried how innovative energy companies really needed to be and that perhaps they should focus on "providing a basic decent service" rather than the best possible service for vulnerable customers. For one consumer rep, "consistency had more value than innovation", making it easier to communicate with customers about the support that is available. They recognised though, that without any innovation, a service would not keep track with changing need or rising customer expectations.

A number of consumer voices felt that companies could do more to articulate and promote their innovative services that benefit customers - "there is no point being innovative if they don't communicate the service to those that need it". This is a problem recognised by Ofgem's research on awareness of the PSR[82] and the arguably limited (though improving) take-up of services. In addition, our case study research supports this view. We identified some seemingly very innovative and useful products and services made available by both networks and suppliers where few customers were using them.

Identifying and sharing of innovative practice

A key challenge is to turn vulnerability innovation into industry-wide progress, that improves levels of service for all energy consumers with additional needs. Sustainability First and consumer groups such as Citizens Advice have long argued that there should be more emphasis on the sharing of good practice and innovation that supports vulnerable customers. This is a view supported by Ofgem and reflected for example in both network incentives and the regulator's open letter on the smart meter rollout[83].

We found that there is significant variation between the companies on the extent to which they proactively seek to identify innovation and best practice that they can then use to support their own customers in vulnerable situations. Some companies especially network companies "leave no stone unturned", systematically horizon scanning for new ideas. Other energy companies, more likely to be suppliers, don't seem to really think about it. They are more reactive, responding to relevant events and publications in what one called "more of a drip drip approach". The box below outlines the difference between standard and good practice in identifying vulnerability.

[82] Ofgem research (2013) indicated that only 24 per cent of consumers are aware of PSR.

[83] Guidance note on cooperation between competitors on the smart meter rollout, Ofgem, 12 May 2016. The latter sets out Ofgem's expectation that suppliers 'can and should share' best practice during the smart meter rollout including among other areas, on identifying vulnerability and ensuring those consumers' specific needs are catered for. - Ofgem the GDR's incentive focused on collaboration and Ofgem's Guidance Note on Cooperation between competitors during the smart meter rollout

Standard practice – 'ad hoc' approach

- Read good practice and performance reports, e.g. Ofgem's social obligations report (now Vulnerable consumers in the energy retail market report: 2017), and good practice guides from organisations such as Citizens Advice and Money Advice Trust, as and when published.
- Attend ad hoc energy sector events and conferences, e.g. NEA's Warm and Healthy Homes event,[84] Essential Services Action Network (ESAN) vulnerability event.[85] and Utility Week debt conference.[86]
- Use feedback from benchmarking exercises such as for the Smart Metering Installation Code of Practice (SMICOP)[87] and the Energy-UK (EUK) Safety Net[88] audits.
- Participate in ENA or EUK-led industry working groups, e.g. The Safeguarding Customers Working Group[89], the cross-industry Customer and Social Issues Working Group (CSIWG) and EUK's Vulnerability Group.
- Identify ideas as and when from general reading.
- Use online resources, e.g. Networks Association's Smarter Networks Portal website.[90]

Good practice – more systematic and proactive

In addition to standard practice – those companies that go above and beyond do some of the following:

- Map and seek to strategically understand the vulnerabilities of their customer base. They then proactively identify innovations to address these diverse understood needs as part of a wider company vulnerability strategy, e.g. Western Power Distribution's Who's on our Wires Horizon Scan (p.39)
- Participate in regional forums that bring together utilities and wider organisations, e.g. NGN and Northern Powergrid are part of the coalition 'Infrastructure North'.[91] Cross-sector groups can be particularly valuable ways in which to identify and share problems and develop solutions.
- Actively seek learning from other sectors, e.g. British Gas is working in partnership with Barclays Bank on piloting their Community Wings programme (p.138). SSE identified SignVideo from scoping activity in the financial sector (p.57).
- Are proactive in identifying new opportunities to identify innovative practice, e.g. NGN attend meet-ups 'Tech for Good'[92], to help identify ideas.
- Undertake external auditing, e.g. BSI's BS 18477 for Inclusive Service Provision (p.135) and Action on Hearing Loss' Louder than Words Charter Mark (p.137). External reviewers share relevant cross-sector good practice as part of these kinds of processes.

Scottish Power has a Vulnerability Forum whose role includes identifying and sharing best practice internally, reviewing new initiatives, sharing lessons learned from internal and external organisations.[93]

[84] http://www.nea.org.uk/whhf-networking/
[85] http://www.esan.org.uk/esan-holds-vulnerability-conference/
[86] http://utilityweek.co.uk/Event/utility-week-consumer-debt-conference/195029#.WdLLflprzeQ
[87] Smart Metering Installation Code of Practice, 29 September 2017.
[88] The Energy UK Safety Net: protecting vulnerable customers from disconnection, Energy UK, February 2016.
[89] http://www.energynetworks.org/info/safeguarding-customers/safeguarding-customers-overview.html
[90] http://www.smarternetworks.org/Index.aspx?Site=ed
[91] http://infrastructurenorth.co.uk/safewarmincontrol/
[92] https://www.meetup.com/techforgood/
[93] Vulnerable customers in the retail energy market:2017, Ofgem, October 2017.

Views on the tension between competition and sharing/collaboration

We explored with companies the extent to which in practice they did and could share innovative vulnerability practice that could benefit consumers. The following are our main findings:

- All parties valued the sharing of new practice and lessons learned that could benefit customers in vulnerable situations and thought there should be more of it. Networks also generally supported 'incentives to share and collaborate' in both regulation and competitions such as the LCNF/NIC. However, some companies were concerned that if they genuinely shared failures, it might not reflect well on them, particularly in the eyes of Ofgem.
- Perhaps not unsurprisingly given the regulatory framework, network companies seem to share more than suppliers. Gas networks in particular appear to have more of a culture of sharing in part linked to gas safety – as one gas network put it "no one is precious, everyone is happy to share". The Gas Discretionary Reward Scheme in particular was seen to encourage collaboration and the network innovations we identified during this project were quickly shared and piloted by others. However, the network incentives and especially a desire to be 'fast tracked' do seem to create an element of competition that is as one put it is "a double edged sword". It means companies prefer to share after submission deadlines, and "once they have got credit for ideas". So there is a delay in the dissemination of information that could help vulnerable customers.
- All suppliers agreed that in theory vulnerability should be an area where "competition is less of an issue" but in practice did not want to share in areas of competitive advantage, even if they had solutions that could benefit customers with additional needs. E.g. on smart prepay. Where they did share, it was generally "at a high level, never the blue print". Many suppliers indicated that companies can be "very cagey", with "a bit of playground mentality, I will show you mine if you show me yours".
- Companies value the existing avenues for sharing innovation and learning. For example, ad-hoc events held by charities such as NEA, industry conferences and working groups such the Safeguarding Customers Working Group and the Energy UK Vulnerability Group. However the latter industry groups are seen to be limited in what they can realistically achieve, in particular given the time allocated to them. In addition, many small suppliers are not EUK members so sit outside of some of the mainstream structures for sharing innovative practice and may not have the resource to attend relevant meetings. Identifying and sharing effective innovation within smaller suppliers is therefore a particular challenge.
- Suppliers reported that sharing was improving and that they were "getting braver at sharing". It was felt easier to work together on shared problems for which nobody has a solution yet. e.g. as they did with the inclusively designed IHD (see case study details p.149) or where there are safety issues and there is a shared liability.
- A handful of suppliers suggested that the Competition Act was a barrier to sharing and that industry was particularly sensitive to this given the relatively recent CMA investigation. A number mentioned frustrations over inconsistent and seemingly unrealistic regulatory messaging in this space. In particular the tension between principles based regulation, which sees competition and innovation as a key driver to improve service delivery for vulnerable customers, and Ofgem's expectations that companies also share learning which undermines their competitive advantage.
- Much of the sharing that does take place by energy companies seems to be quite inward looking e.g. involving benchmarking supplier against supplier or network against network so arguably the bar is not particularly challenged. This is not the case for all companies. We identified a number of more innovative energy companies that actively collaborate with companies and organisations in different sectors, thus sharing vulnerability innovation learning but side-stepping competition tensions.

- Most felt there was scope for greater sharing between networks, suppliers, product manufacturers and across sectors. The majority of industry interviewees attended cross-sector conferences such as Utility Week events which were useful for getting ideas. One consumer group highlighted the particular value of the Low Carbon Networks and Innovation (LNCI) conference.
- There seems to be relatively little cross fertilisation of ideas even within a company where competition tensions should not be an issue. This includes with overseas parent companies, even when there are good ideas worth sharing.
- There is seemingly also little sharing of approaches between industry and consumer and disability groups – ESAN's 2015 conference was cited as a notable exception. One industry interviewee also highlighted that the Energy Ombudsman, Ofgem and Citizens Advice all share a lot of learning between themselves as part of the tripartite agreements (though focused a lot on the problems, rather than innovation). It may be valuable to share this insight more widely.
- Since completing our research there has been a step change in the sharing of good practice with welcome initiatives by EnergyUK (EUK)[94], the UK Regulators Network (UKRN)[95], Ofgem[96] and Citizens Advice.[97] This is very welcome. With more than 60[98] domestic suppliers in the energy market, old mechanisms for sharing new innovation with statutory bodies (notably via industry, Ofgem, statutory watchdog bilaterals with suppliers) are seemingly no longer fit for purpose. Ofgem and Citizens Advice are unable to meet regularly with all companies. There is therefore a need for new approaches.

[94] http://www.energy-uk.org.uk/press-releases/370-2017/6305-new-guide-for-energy-suppliers-on-vulnerability-and-mental-health.html
[95] Making better use of data: identifying customers in vulnerable situations, UKRN, October 2017
[96] Ibid.
[97] Citizens Advice are producing a series of good practice guides.
[98] As of March 2017. https://www.ofgem.gov.uk/data-portal/retail-market-indicators

New ways to share:

The Edge - NHS Transformathon[99]

Contact: england.si-horizons@nhs.net

The NHS Transformathon was a free, 24-hour, online, global event that brought together health and care staff and service users to connect, share and learn from each other. It showcased the latest innovations, practices and methods to inspire and encourage ways to make change happen. Each session featured change leaders, health and care professionals and patients discussing how they are making changes to improve their local health and care services, and the methods they are using to do this. The event covered how patient leadership, co-production, social media and human centred design are improving outcomes for patients. Running alongside the broadcast there were a number of live hacks working to address local issues and develop solutions, with the help of NHS Transformathon's global audience.

Recommendation 1

We welcome recent initiatives by Ofgem, Energy UK (EUK), the UK Regulators Network (UKRN) and Citizens Advice to identify and share good practice. All parties, including companies, consumer and disability groups and regulators, should build on this work and consider what more they can do to identify and share vulnerability innovation and learning, including what doesn't work, between:

- Electricity and gas suppliers
- Energy companies and disability/consumer groups
- Across sectors and internationally.

[99] The Edge is a free social platform committed to funding, sharing, curating and creating the boldest and most innovative new ideas for changing health and care. http://theedge.nhsiq.nhs.uk/transformathon/

Company views on the benefits of vulnerability innovation

It is important to understand company attitudes towards vulnerability innovation. When prompted interviewees highlighted the following potential benefits to their organisations from innovating to support customers in vulnerable situations:

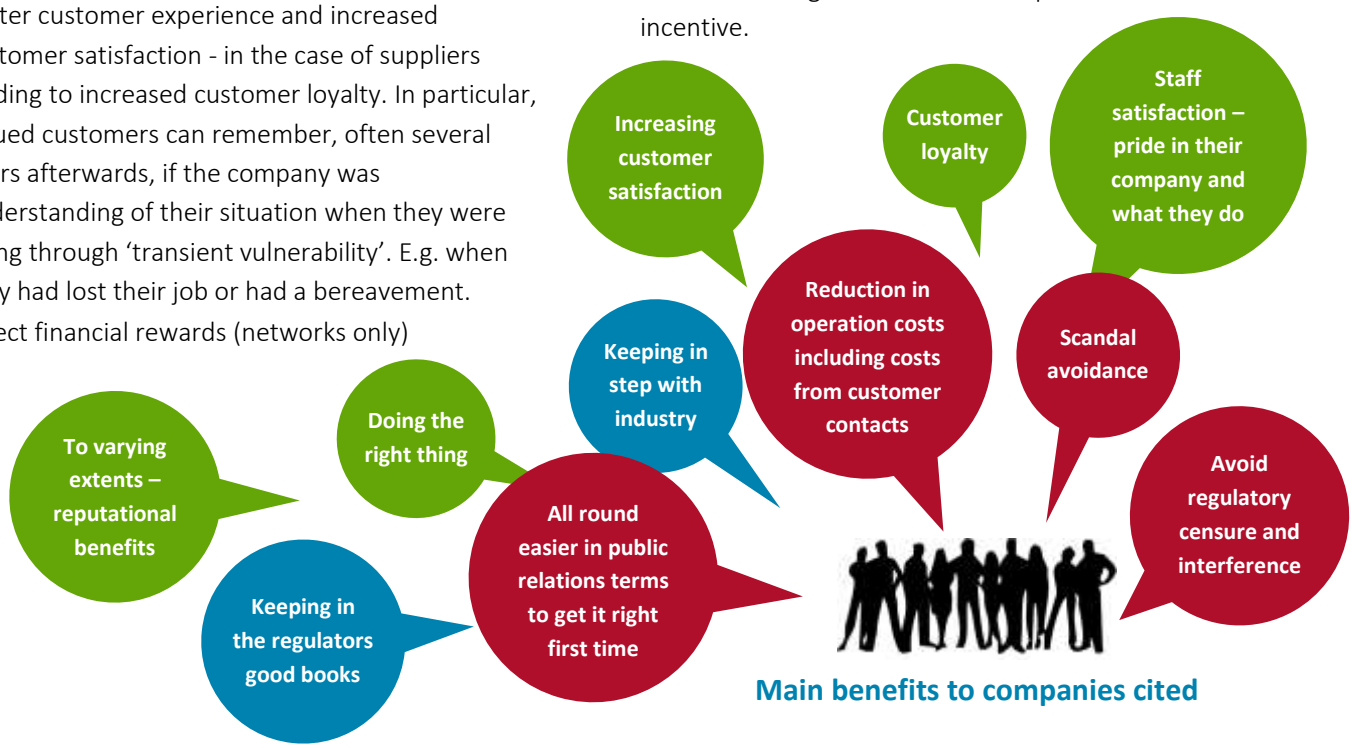
- Increased staff retention and motivation - staff take pride in their company and what they do, knowing that they are doing the right thing.
- Reduced staff stress - staff are more likely to be able to support a customer in need and deal with an emotional situation.
- Reputational benefits. As one company said, their winning innovation wasn't driven by the PR benefits, but "the [PR] value of it is incredible".
- Reductions in operating costs - including reduced costs from customer contacts – "If we meet the needs of all, it's a lot less work. You get fewer calls, are more likely to be understood and less likely to get regular feedback, which can be a particular burden on staff time." Indeed, Ofgem's consumer Engagement Survey 2017 found that customers in arrears or with a disability were more likely than the average (27% and 14% respectively, compared to 10% for other consumers) to have complained to their own or previous supplier.
- Better customer experience and increased customer satisfaction - in the case of suppliers leading to increased customer loyalty. In particular, valued customers can remember, often several years afterwards, if the company was understanding of their situation when they were going through 'transient vulnerability'. E.g. when they had lost their job or had a bereavement.
- Direct financial rewards (networks only)

Innovating to meet customers' different needs also helps companies 'avoid problems'. In particular:

- Companies are more likely to "keep in the regulator's good books", meet rising expectations and avoid regulatory censure and interference.
- It helps with "keeping in step with industry" – companies cared about not falling behind, or being seen to fall behind others in the industry.
- It also helps to maintain a good public reputation – "it is all round easier to get it right first time."

In practice, not all companies recognized these benefits – echoing the NAO's findings. This may be in part because many companies did not seem to evaluate the benefits to their business of vulnerability innovation - even where this was seemingly successful.

Most suppliers we spoke to felt that despite the potential benefits of vulnerability innovation, there were insufficient market drivers to innovate to support vulnerable customers or to outperform each other in this area. As one company put it "we do it well because we have to [it's the right thing to do and regulation requires it]. There is no commercial win yet to do it brilliantly!". Interviewees by contrast, suggested that the network regulation framework provided reasonable incentive.



Main benefits to companies cited

Barriers to vulnerability innovation - for energy suppliers and network companies

We found most staff working on vulnerability issues are very passionate and committed about improving the lives of customers with additional needs. However, at times they face barriers when trying to get new ideas off the ground. These are summarised in this section and the graphic below. These reflect the views of, and obstacles experienced or witnessed by those interviewed. They do not necessarily exist in all networks or all suppliers.

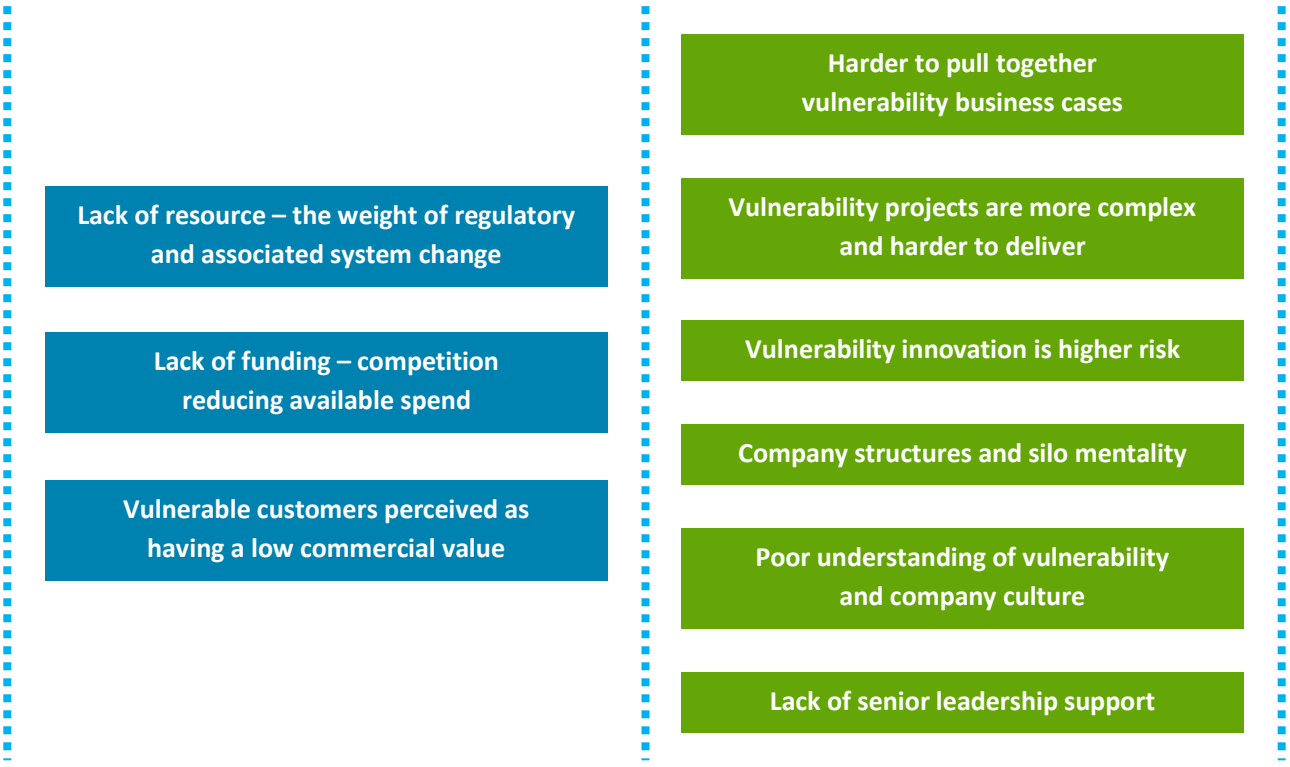


Figure 1 Cited barriers to larger energy companies innovating to support customers in vulnerable situations *– those in blue apply to suppliers only, those in green apply to both networks and suppliers.*

Barriers to vulnerability innovation – supplier-only

Vulnerable customers are seen as having low commercial value/commercial disadvantage

The argument goes that in the supply market, energy companies compete for customers with additional needs in order to maintain and grow their market share. This drives innovation and improvements in products and service[100]. In practice, many larger suppliers expressed a view that having large numbers of vulnerable customers was a competitive *dis*advantage.

Some companies implied that management may not see acquisition of more of vulnerable customers as a priority as they are *not* seen, despite their current stickiness, as attractive market segments. Price caps are seen to exacerbate this. There is a dominant view within companies that vulnerable customers have on average a higher cost to serve. For example, they are more likely to call the company, need home visits, and be a credit risk. Many suppliers implied a perception that there is not as much value in vulnerable customers. This is linked to a view that if they target vulnerable customers with products and services, they would be selling low volume, low cost items with therefore lower margins.

Most suppliers are reportedly focusing on "minimizing vulnerability costs" e.g. reducing bad debt, minimize call costs, rather than exploring the market opportunities of different vulnerable customer segments. The main exceptions being around smart prepay, and connected home solutions for older people. Both of these are actively seen as a market opportunity.

This contrasts with the perception of many non-energy industry representatives and some consumer/ disability groups, who believed there were good commercial opportunities from the vulnerability market especially with smarter technologies. They highlighted the potential for: inclusively designed products and 'energy basics' packages, which could not only benefit vulnerable customers but have broad appeal; not just the smart prepay market but potentially other segments such as customers with particular time of use profiles who may be cheaper to serve and also on low incomes.

All parties recognised the potential of new products and services linked to the connected home, which could improve accessibility, health, safety and convenience for customers with additional needs. One disability representative felt that companies would be missing opportunities if they only focus on wealthier people as "even vulnerable customers spend £50 on a Sky Box." This view was echoed by one larger supplier who felt there is scope for energy suppliers to offer remote care services to low-income customers who are currently paying uncompetitive prices for tele-care from non-energy providers.

This mismatch in views on the market value of vulnerable customers between supply chain innovators and disability groups on the one hand, and many energy companies on the other, is particularly important as energy suppliers are currently the primary vehicle for much innovation to be delivered to energy customers.

[100] Ofgem's Regulatory Stances, Ofgem, December 2016

Lack of resource – the weight of regulatory and associated system change

Many suppliers and those that worked with them reported that the sheer weight of mandatory regulatory change (settlement reform, 24 hour switching, smart meter rollout, PSR changes, CMA reforms including the prepayment meter price cap) means that even in suppliers with a strong commitment to social outcomes, that vulnerability innovation is becoming a lower priority. Resource is being prioritised elsewhere. In particular, while both networks and suppliers said they experience difficulties at times getting access to the IT schedule for systems change, for many larger suppliers this is now seen as a particular barrier to vulnerability innovation. Interviewees reported that the weight of regulatory change coupled with regulatory and political uncertainty also means that decision-making is becoming increasingly short-term and companies are increasingly risk averse.

Declining vulnerability innovation funding

Network companies have financial incentives to innovate to support customers in vulnerable situations. However suppliers, and those that work with them, said that lack of available funds can be a barrier to vulnerability innovation, particularly for smaller energy companies. Many interviewees reported that with more than 60 domestic retailers[101] in the energy market, that ever greater competition is reducing retail margins. This means that there is less spend being made available for non-regulatory change and initiatives for vulnerable customers. Companies are focusing innovation on mass-market propositions. Some see vulnerability innovation as too niche and diverse, with lower returns. In most, but not all cases, suppliers are not applying the concepts of inclusive design, which could increase the accessibility of, and therefore further broaden the appeal of, mass-market products and services. 'Socially useful' and profitable are still frequently seen as mutually exclusive by many larger suppliers.

[101] https://www.ofgem.gov.uk/data-portal/retail-market-indicators. Between December 2013 and June 2017, the number of domestic gas and electricity suppliers increased from 24 to 60.

Barriers to vulnerability innovation - both networks and suppliers

Vulnerability projects can be more complex and harder to deliver

Customer-facing projects to support vulnerable customers can be more complex and take longer to deliver. The value chain may be drawn from multiple agencies, and multiple agencies may be needed to deliver it e.g. social housing providers, healthcare agencies, other companies. This takes longer to set up and implement. One network also said they were 'relatively invisible' to the end user so finding appropriate partners and building effective working relationships can take longer. Another reported that some vulnerability communities e.g. non-English speakers, can also be harder to engage, which adds challenges to normal engagement programmes. This is particularly a barrier given the current short-term horizons for decision-making. As one network stated "Internally we are expected to deliver initiatives quite quickly but [with vulnerability projects] it is often difficult to do and you may need several years to see the benefits".

Vulnerability innovation is higher risk

Innovation explicitly targeting vulnerable customers is seen as higher risk than normal innovation so less attractive for some companies. Projects can fail. When things go wrong, this can have a greater impact on vulnerable customers than a 'typical customer'. Some suppliers have reportedly not prioritized vulnerable customers during smart meter rollout for this reason. There is also a greater risk of negative publicity if things go wrong. As one industry rep commented "NPower's FuelBank (see p.92) was genuinely brave as it played directly into the 'heat or eat debate', it could have massively backfired". One network reported that they are encouraged by their CEO to try things and "fail fast" but most reported that there was little management appetite for additional risk at the moment given wider economic, regulatory and political uncertainty. As one energy network put it, "We can't afford to crash the ship". Some companies sought to mitigate risks by working in partnership with consumer organisations with trusted brands.

Company structures and siloed thinking don't support innovation in this area

Within a company vulnerability and innovation are often seen as separate or as one interviewee put it: "hotplates versus robots". Innovation teams and teams responsible for customers with additional needs are often working in relative silos, separate from each other and the wider organisation. This can make it harder to identify and pull together the business cases for cross-organisational ideas and slower to get sign-off particularly in more vertical organisations. It can be physically more difficult to get the right people together to make a decision. In addition, as one industry rep indicated, "the left hand often doesn't know what the right hand is doing" and information of relevance to supporting customers with additional needs, does not always get communicated from the person who attended a relevant meeting throughout the organisation.

Vulnerability is not embedded in company design or decisions

Linked to above, a number of interviewees felt that innovation is often technology driven, with 'vulnerability as an add-on at the end' rather than customer need driving change within energy companies. There are some examples of good practice however. British Gas has worked with RICA to inclusively design the Hive heating controls, and EUK led a collaboration to develop geo's inclusively designed In Home Display, jointly with RNIB (see case study details p.149). All interviewees bar one knew about the benefits of inclusive approaches but this understanding does not seem to translate into many companies' decision-making processes.

There also seems to be little awareness about inclusive design tools and resources available from charities that could help businesses. Those with greater understanding often seemed to have worked with **British Standard 18477 for Inclusive Service Provision** and were more likely to report having structures in place.

Leadership and the company culture doesn't see vulnerability innovation as important

Some companies reportedly still see 'vulnerability innovation' as a 'nice to have'. Many interviewees felt that this stemmed from lack of senior leadership understanding and support for vulnerability. In particular, this weakens the ability of individuals to get buy-in to take forward ideas. Several companies reported that it was hard to get support for voluntary social initiatives as the company culture (led by overseas owners) tended to view energy vulnerability as mainly a social welfare problem and therefore the role of the state.

A few interviewees felt there was a disconnect between the pro-vulnerability rhetoric from the top and what leaders in practice prioritise and reward. For example, challenges can arise when there is a disconnect between the leadership's stated commitment to vulnerability and the incentives in the middle of the organisation which results in 'a tug of war'. E.g. if middle managers are incentivised to reduce debt, this could have an impact elsewhere in terms of vulnerability objectives. The lower priority given to vulnerability work by leadership impacts the priority given to it by individuals throughout the organisation. As one indicated "Career wise, there's nothing in it for me. No-one will celebrate it". Indeed there are seemingly very few Director level industry posts explicitly focused on vulnerability.

Harder to pull together vulnerability business cases

While regulatory incentives can facilitate support for vulnerability innovation, both networks and suppliers report it can still be harder to pull together the internal business case for vulnerability projects – in particular to demonstrate the value and demand. Linked to all of the above, this is for a number of reasons:

- The business case for implementation may be drawn from across multiple departments with company structures not supporting collaboration in a timely way. In addition, the case for delivery is also more likely to involve multiple external organisations e.g. health, housing, energy.
- Demonstrating demand or need is reliant on a having a good evidence base, which is not always available. For example, companies do not routinely monitor vulnerable customers' experience or satisfaction or effectively evaluate the impact of vulnerability projects to the business.
- A number of industry reps highlighted that demand from vulnerable customer segments is often weaker so harder to prove.
- Low levels of understanding of vulnerability markets within organisations. In larger suppliers a handful of interviewees reported that marketing departments may drive innovation, but often do not have an active interest in customers with additional needs. As one industry rep indicated "they do not see vulnerable customers as an aspirational or sexy demographic".

Poor understanding of the experiences of customers in vulnerable situations

A number of company representatives reported that despite improvements in vulnerability understanding there is still a long way to go. One consumer representative felt that "it is not so much a lack of will by energy companies to meet the meet the needs of vulnerable customers, as a lack of understanding." A number of issues were identified:

- Information on disabled energy customers' experiences in the energy sector is not publicly or readily available. One interviewee reported that approaching new charities for insights and support can be 'surprisingly challenging' without existing contacts.
- Companies have relatively little evidence of their own customers' experiences. E.g. they may not monitor customer satisfaction, calls or complaints broken down by key vulnerability demographics. Not knowing the challenges customers face is likely limiting companies' ability to understand and deliver beneficial innovation. Indeed, one disability group reported their frustrations in getting businesses to see disabled consumers as a priority-market and to better understand the diverse needs of this group of customers.
- Surprisingly, companies, especially suppliers, do not always have appropriate frameworks in place to effectively monitor, evaluate and audit vulnerability programmes. This is in part because the initiatives may not be commercially driven e.g. as one company said about their project when explaining why there was no impact assessment, 'It just felt like right thing to do'. This view was reinforced by our assessment of the innovation case studies, which found that a large number of projects had not been properly evaluated. This means innovations may be undervalued, making it harder to demonstrate the commercial case for future initiatives.

Barriers to vulnerability innovation – for smaller suppliers

Smaller suppliers make up the bulk of the providers in numbers and around 5% of the total domestic market share[102].

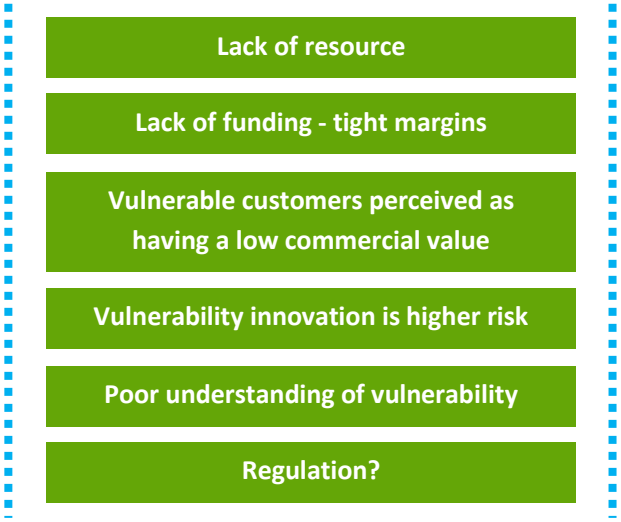


Figure 2 Cited barriers to vulnerability innovation for smaller and medium-sized suppliers

Those with experience of working with or for smaller suppliers and new entrants reported that smaller to medium sized companies are generally more nimble – able to communicate more easily, make decisions faster, bring new vulnerability products and services to market more quickly. They are not as constrained by legacy IT systems in how they support customers with additional needs. Though there was a perception from some that local authority led companies, may not be as nimble.

However, smaller and medium sized suppliers appear to face even greater financial and resource constraints with most innovation driven from "a strong desire not to go bust!". Even when smaller retailers are aware of technological opportunities to support customers with additional needs, they are not always able to fund them. The cost of new services, even when relatively low, is seen to add up particularly if you have to pay for a service that relatively few customers need to use.

While smaller suppliers' appetite for risk reportedly varies, vulnerability innovation is considered particularly high risk, given the potentially devastating impact of reputational problems on a smaller business if approaches don't work. Unlike larger companies, as one put it "When you've got less money, you can't afford to be *too* wrong".

For those suppliers without explicit social objectives or who are not targeting the prepay market, vulnerable customers are reported to be a relatively unattractive demographic, with for some, their "whole approach is to try to avoid them because the cost to serve is so much more". There was recognition however, that there were market opportunities. For example, smart pay as you go, connected homes, and if a customer is on direct debit the additional cost reduces.

Lack of relevant vulnerability understanding and skills may also be limiting their ability to innovate. This 'understanding barrier' which also impacts some larger suppliers, appears to be exacerbated by lack of resource, which means they are often not able to attend relevant meetings on vulnerability issues, which could aid their understanding. Despite the value of groups like the Independent Suppliers Forum, there was arguably understandable sense that such groups were not likely to be particularly engaged on social issues. This coupled with the evidence of many smaller suppliers relatively poor support for customers in vulnerable situations suggests further action would be valuable.

[102] Energy Spectrum 588, Cornwall Insight, 2 October 2017

Improving the vulnerability evidence base

Recommendation 2

In line with the findings of both the National Audit Office and Scope's Extra Costs Commission, we found that a stronger evidence base is needed to understand vulnerable customers' experiences in the energy sector and their market value. This would help inform where innovation is most needed and investment might be most profitable. In order to improve the collection and availability of data about customers in vulnerable situations:

a) Industry should commission research into the commercial and market opportunities to retailers of different vulnerable energy customer segments, including potential impact on reducing overall cost-to-serve. This is in support of a market-led case for more innovation to focus on vulnerable customers.

b) Energy networks and suppliers should:

- Proactively monitor and research the experience of their vulnerable customers e.g. capture complaints data and satisfaction data broken down by key vulnerability demographics.
- Develop effective and strategic working relationships with organisations working with vulnerable customers. This includes 'co-designing' solutions to problems with those who experience them.
- Draw upon staff experience so that their staff become principle 'agents of change'.
- Review how they evaluate the impact of vulnerability initiatives to see where improvements can be made. This should explain the benefits of approaches in terms of the customer experience, the business and wider societal benefits (both monetised and non-monetised).

c) We welcome Ofgem's new Vulnerable consumers in the retail market report: 2017, which provides useful information and benchmarks. We support this being further developed in 2018, to draw upon a wider evidence base from networks, consumer and disability groups and the Energy Ombudsman.

Barriers to vulnerability innovation – for product and service innovators

Business to business supply chain innovators, such as product manufacturers or data services providers, are dependent on energy companies, social housing providers, builders and other customer facing bodies purchasing their products and services on behalf of vulnerable customers who might benefit from them.

The argument goes that competition should drive innovation to support customers with additional needs, with the best products and services selected by companies to meet customer demand. In practice all supply chain companies said they would like to be considerably more innovative and inclusive but face a number of barriers. The barriers cited are outlined below.

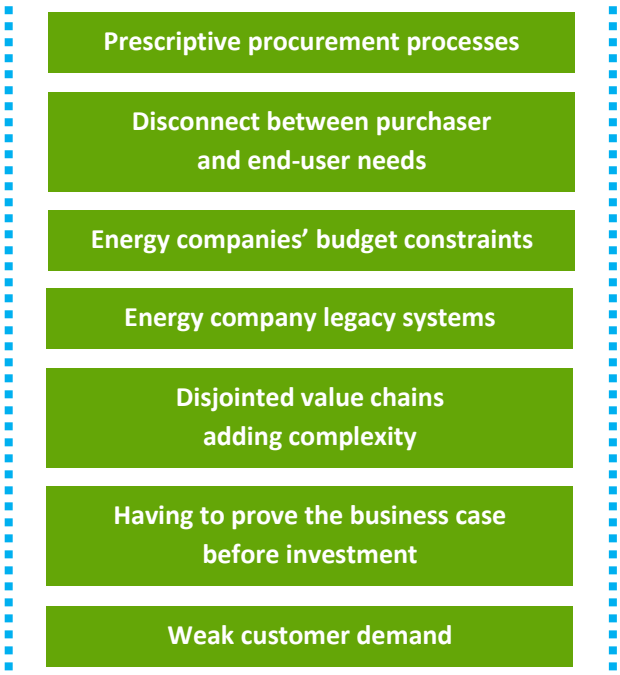


Figure 3 Cited barriers to supply chain vulnerability innovation

Prescriptive procurement approaches

Energy companies' and government spend billions on procurement each year. Procurement processes are recognized as a potential barrier to innovation and this view was supported by some of our interviewees[103]. Specifications for products and services are often very prescriptive, leaving little opportunity for supply chain innovators to be more creative. As noted, energy companies do not always recognise the commercial value of vulnerability markets and inclusive design. Businesses develop what is specified. It was felt by some that this often leads to a mass-market homogenized products and services at lowest cost. In addition, "processes can be slow and the market is moving very quickly. Consequently, there is a risk that products become out of date before they are deployed, because technology overtakes them."

Disconnect between the priorities of the purchaser and the needs of the end user

Building on the above, there can also be a disconnect between the priorities of the purchasing company and the needs of consumers. For example, builders may want to install the lowest cost heating system, rather than the most cost efficient system for the customer to run or easiest for the householder to use. Such approaches in part drive the installation of poorly designed heating controls[104], and electric heating in new builds even where gas is a viable option and safe to install, despite the extra costs and inconvenience to customers[105].

Where activity is driven by regulation, companies may be particularly focused on ensuring compliance at lowest cost. E.g. one energy industry interviewee stated some companies would if they could "offer the lowest cost IHD [in home energy display] possible and throw it

[103] See more at: http://www.nesta.org.uk/blog/how-not-spend-it-6-ways-procurement-blocks-innovation#sthash.rPYZEglM.dpuf
[104] Consumers and domestic heating controls: a literature review, Consumer Focus, July 2012
[105] Insights paper on households with electric and other non-gas heating, Ofgem, 11 December 2015

in through the window!" despite the benefits to customers of well-designed interfaces.

Budget constraints

As noted, with the growth in competition retail margins are viewed as being squeezed, reducing spend available for more innovative products and services. This is particularly the case with smaller energy companies who are very focused on price and don't have the money for what are seen as engagement activities. For example, it was reported that many suppliers only have a £15-20 budget to spend on technology and services for customers during smart meter rollout, thus limiting what supply chain innovators can deliver for vulnerable customers.

Legacy systems

In the case of the larger energy suppliers in particular, legacy systems are thought to sometimes limit innovation and inhibit flexibility. For example it can be harder to deliver tailored energy advice from smart metering data, more flexible billing and payment options within existing systems.

Disjointed value chains

A number of interviewees highlighted the potential of innovative approaches and smart technologies to deliver social and healthcare benefits including tackling fuel poverty. However the business case to deliver improvements often involves pulling together value from multiple sectors including healthcare, housing, and energy in particular. Despite innovations being feasible, in practice supply chain innovators highlighted that it is "hard for the business model to stack up". This is due to the practical challenges of bringing together different parts of the value chain. This is in part due to: the fragmented nature of the health service markets (more than a hundred and fifty primary care trusts to whom you have to sell separate services); lack of funds available in social housing; different sector silos; inflexible financing systems; and lack of funds available for this kind of innovation.

Having to prove the business case before investment

'Purchasing organisations' can be risk averse and often want to purchase already proven technologies and services. Supply chain innovators can lead pilots to demonstrate the value of their ideas, but this is very risky especially for small companies. If it goes wrong, companies can end up bankrupt. Some felt there was a funding gap for piloting.

Weak customer demand

A number of companies highlighted that demand for improvements in products and services can be weaker among vulnerable customer segments and harder to prove. As one industry representative said: "vulnerable customers aren't beating down the door for change but if you go to them, support comes afterwards".

> *It is always the channel that is the hold up and people not being ready for technology.*
>
> **Supply chain innovator**

Barriers to vulnerability innovation – customer-facing service providers

We interviewed four people, including two from outside the energy sector who are interested in providing new customer-facing services to empower energy customers in vulnerable situations to switch and to complain. They reported a number of barriers: not knowing how to find out about the key players in the industry and how it works –"there are no books on it"; not knowing who to approach for guidance and if Ofgem was willing or able to help. Also, most importantly they feel it is "very hard to come in and innovate, as third party intermediaries and suppliers are all happy with the status quo". "They want to strong arm you to work along the lines that the system already is" and don't want to change". Consumer groups such as Citizens Advice, can also been seen as a competitor for services supporting vulnerable customers. As one put it "the energy system favours the incumbents."

Mitigating additional risk from vulnerability innovation

Recommendation 3

Ofgem should *further* promote The Innovation Link,[106] including as to small suppliers and non-energy communities. This includes adding a vulnerability link on the Innovation Link page.

Recommendation 4

Energy UK and ENA should continue to offer, and increase the visibility of their 'open door policy' to any innovator who seeks energy company engagement to deliver an initiative that benefits vulnerable customers. This should include promoting a clear channel on their website.

[106] This is a service that offers feedback to innovators on the regulatory implications of their idea. It provides innovators with a Case Manager and helps them to understand how the regulation may impact on them, and enables Ofgem to consider how the regulations should change going forward. The Innovation Link also provides a space for innovators to trial their ideas, ensuring that consumers are protected.

Barriers to vulnerability innovation – views on regulation and government policy

Supply-side

On the whole, regulation is not seen as a barrier to suppliers innovating to support customers with additional needs but there were some important exceptions:

- **Prepayment cap -** Some interviewees felt the prepayment meter cap risked discouraging innovation around smart pay as you go energy and the benefits that could be delivered to consumers. This was because fewer customers would sign up to smart pay as you go and the commercial opportunity for companies would reduce. Indeed some companies had already shifted their innovation focus from smart pay as you go to other areas. Others believed that the SMETS 2 exemption should mitigate this and incentivise the rollout of more interoperable technology.
- **The Data Communications Company -** There were strong views on the smart metering system, in particular rules around how consumer access devices are expected to work, the technology being deployed and the Data Communications Company (DCC)[107]. The government's approach was described by one as "wrapping the industry in a very high-tech straight jacket". It was felt that the approach hindered the delivery of additional products and services, including the additional costs in using the DCC. While many believe there will be 'work arounds' to address barriers (notably circumventing the DCC and installing another communications system), this was seen as adding unnecessary time and money.
- **Regulatory complexity** - for smaller suppliers, there was a general sense that the complexity of the regulatory framework deterred innovation. One interviewee cited the licence conditions around face-to face sales as a barrier to innovation to help harder to reach groups switch, though they understood the rationale for the protections given historic problems with mis-selling.
- **Lack of joined-up policy/funding -** There was a strongly held view that a more joined up approach is needed on vulnerability within and between Ofgem, BEIS, wider government, the research community and innovation catapults. For example, one stakeholder highlighted the lack of coordination in terms of aims and activity between Innovate UK, innovation catapults, Research Council funding, and regulatory innovation money as well as the lack of focus on the public interest and social issues. This was not only to ensure policy alignment but to maximize the value to vulnerable customers and the wider public interest from innovation funding.
- **Lack of policy expertise -** Some policy-makers are seen to lack the technological understanding and vulnerability expertise to help support innovation and drive it forward. This is exacerbated by high staff turnover within Ofgem and government.

Wrong signals to new entrants and smaller suppliers - Importantly, there was also a view (among both consumer groups and parts of industry) that the regulatory framework is sending the wrong message to new entrants about their social responsibilities. New entrants do not need to support prepayment until they have 50k customers, or provide Warm Home Discount or ECO until they reach 250,000. This, coupled with the approach from some quarters 'to avoid vulnerable customers at all costs', was encouraging a mindset that smaller companies did not have to [108]think about the vulnerability needs of all consumers until they are much larger businesses. Instead what was needed was considerations of inclusivity and vulnerability built into the business model at an early stage so the company would grow and innovate with these considerations at its core. In addition, there was a view that there was

[107] The Data Communications Company provides the communications infrastructure that handles smart meter data. They make sure smart meters send the right information to ensure bills are accurate. They are regulated by Ofgem and will not themselves store any customer data.

[108] Vulnerable customers in the retail energy market:2017, Ofgem, October 2017.

relatively little scrutiny on the activities of smaller suppliers so they may be "pushing the limits" on the rules around vulnerable customers.

Network regulation

On the network side, the framework is also generally *not* seen as a barrier to vulnerability innovation, with one network stating "there is nothing we couldn't do". However, there were some concerns raised that the incentives were encouraging a focus on "visibly wizzy things" that "look good" rather than what is really needed in terms of minimum service levels. There was a view that companies are being encouraged to come up with different innovations for each new submission rather than consolidate and improve existing projects which could in some instances be more useful. In particular, many felt that it was important that the incentive evolved to reflect rising standards and that care must be taken to "not set the bar too low".

A number of respondents, including those close to the process also raised concerns about the fairness of the judging panel approach. Both judges and networks felt it was very subjective, and that there was scope for greater transparency and more robustness around how decisions are made. As one industry representative stated, "it's lost its value as we don't know how it's scored", and "it can disincentivise innovation, if you try hard but do badly and you're not sure why. It's really demoralizing!". Some also felt it was important to explicitly encourage the joining up of network activity with wider fuel poverty programmes where it can benefit consumers.

For both gas and network incentives there was a view that a sharper focus on evaluating the consumer and wider benefits is needed. This includes longer-term benefits and those delivered to the business and other parties. Also, that more feedback to companies would be valuable along with a mechanism that allowed greater differentiation between good and truly innovative companies.

Supporting small supplier innovation

Recommendation 5

Prior to grant of a supply licence Ofgem should require new market entrants to *demonstrate* their understanding of the vulnerability principle and their related current and future responsibilities in relation to customers in vulnerable situations. This would help embed the needs of vulnerable customers into small supplier business activities from day one – facilitating company growth and related innovation with the needs of all consumers in mind.

Vulnerability innovation enablers

We sought interviewees' views on current and potential *enablers* for vulnerability innovation – that is things that can encourage or facilitate innovation that benefits customers with additional needs. This included external enablers such as regulation, and reputational drivers such as league tables and review sites, as well as internal company structures and processes.

In addition to the interviews, we reviewed the pathways followed by a number of the innovations we identified in this report, from ideas to implementation to see if there were common factors among those companies that seemed to innovate more to support vulnerable customers and to identify any winning formula for successful innovations. From this we have created a 'Vulnerability Innovation Flight Path'.

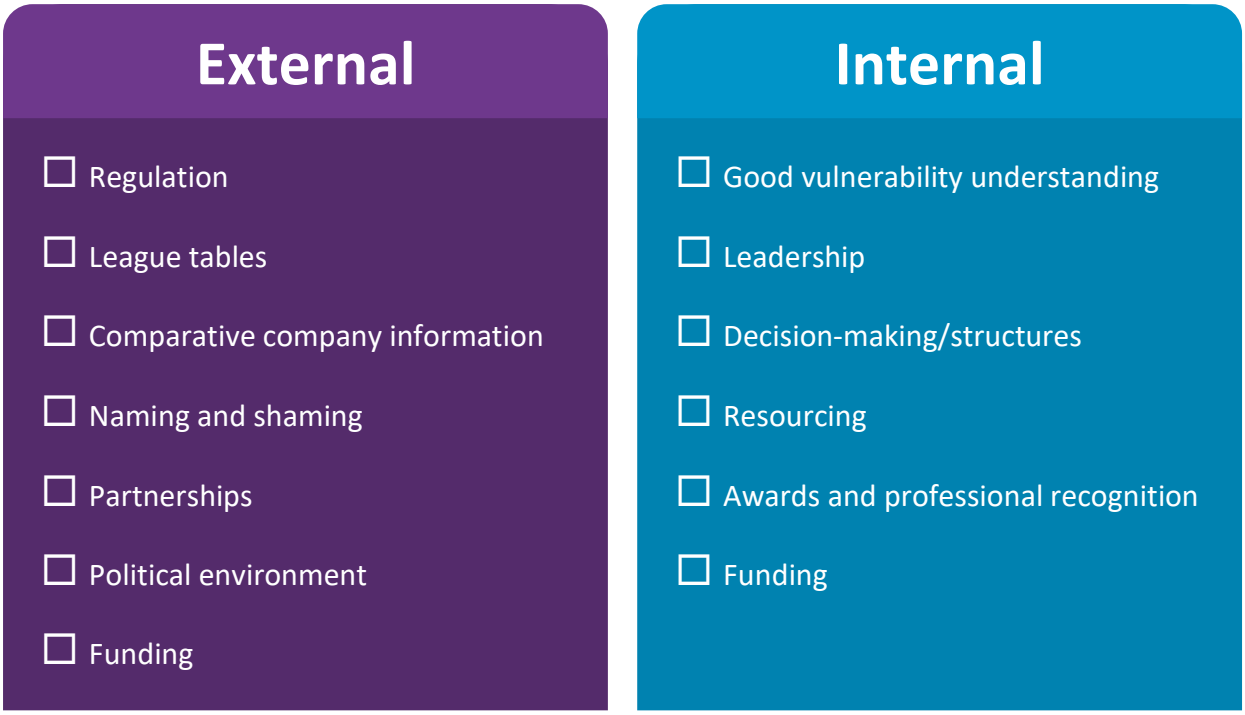


Figure 4 Vulnerability Innovation enablers

Policy and regulation

Regulation and policy are generally seen as very influential on innovation – both directly in terms of incentive mechanisms and licence conditions, and indirectly in terms of the climate that political rhetoric and regulatory climate create.

Energy network incentives work

On the networks side, *incentives* are widely believed by all parties to have had a very positive impact, prompting "a sea change of improvements" in how companies support customers in vulnerable situations. While there were some suggested improvements to the approach, most felt that the network regulatory framework had broadly "the right balance between carrot and stick". Though ultimately "innovation has to come from the company, you can't impose it", incentives were seen to have encouraged a more consumer-centric cultural shift within most network companies. The potential to be fast-tracked was also mentioned as a key driver for network innovation.

Network vulnerability incentives

Recommendation 6

Ofgem should have a specific vulnerability incentive in the next round of network regulation, RIIO2. The approach should ensure that the networks deliver outcomes valued by customers in vulnerable situations. Incentives should be designed to:

- Encourage collaboration and sharing of information among networks, energy retailers and others
- Allow for flexibility in innovation
- Respond to rising standards and expectations – not set the bar too low
- Properly reward those that are delivering impact at a higher level
- Ensure decision-making by Ofgem on the assessment of companies and allocation of any rewards is transparent and consistent
- Reward effective, not just 'sparkly' innovations, which are embedded into business as usual practices.

Thought should also be given by Ofgem as to whether innovation funding such as the electricity and gas network competitions (NIC) should specify that companies consider the implications for vulnerable customers, and how this might best be done.

Prescriptive rules and codes don't drive innovation

For both networks and suppliers there was a general view that prescriptive rules can drive improvements and make things happen more quickly but don't tend to encourage innovation. In the case of voluntary codes, as they have to be negotiated between companies, they can encourage a race to the bottom, with safety in numbers in poor performance around the lowest common denominator.

It is unclear if principles based regulation will benefit vulnerable customers

For most interviewees "the jury is out" on whether PBR and more outcomes based regulation will improve vulnerable customer protection or lead to greater *vulnerability* innovation. Ofgem's approach to monitoring is therefore deemed to be particularly important. Most felt PBR would lead to greater general innovation on the supplier side in terms of new energy products and services – in particular removing the limit on the number of tariffs and prescription on communications - but this might not benefit all customers. E.g. greater tariff choice may lead to increased confusion among certain customers when switching. Some companies reported that they were not expecting to change their approach to vulnerability as a result of PBR.

Ofgem's increased openness is welcomed

A number of interviewees felt that Ofgem's culture had become more open in recent years and that having chats about new propositions was helpful to sense check the acceptability and associated riskiness of ideas. The Innovation Link and regulatory sandbox[109] were also a welcome signal of Ofgem's openness to innovation. But not all interviewees seemed aware that they could contact the regulator to get 'frank, fast feedback' on their prospective innovations. One queried whether much of their vulnerability innovation, while very useful, would be sufficiently ground breaking to qualify for a chat.

Ofgem's Innovation Link is a service that offers feedback to innovators on the regulatory implications of their idea. It provides innovators with a Case Manager and helps them to understand how the regulation may impact on them, and enables Ofgem to consider how the regulations should change going forward. The Innovation Link also provides a space for innovators to trial their ideas, ensuring that consumers are protected.

[109] https://www.ofgem.gov.uk/about-us/how-we-engage/innovation-link

Funding is a key enabler

As noted, funding is a key enabler for vulnerability innovation. For networks, the regulatory incentives have helped to prompt a sea change in activity to engage with and support customers with additional needs. For suppliers, funding is arguably particularly important given the perceived weak commercial drivers, and reportedly declining available resources for vulnerability innovation.

Much 'big project' supplier innovation to support customers in vulnerable situations appears to be funded via money allocated by the regulator for return to customers. For example, so-called redress[110] funds, unclaimed account balances and unallocated prepayment payments. Ofgem's decision to appoint a third party, Energy Savings Trust (EST), to manage and allocate redress funds to charitable organisations will have notable implications for future funding of vulnerability innovation by the larger energy companies in particular. We welcome the Authority's Guidance on the allocation of redress funds, which has taken on board early learning from Project Inspire with its focus on innovation.[111]

A number of respondents advocated for some kind of vulnerability innovation funding which could be open to all parties – suppliers, supply chain innovators and networks. They highlighted that currently there was little focus on inclusivity or vulnerability in existing competitions and that approaches to innovation funding were uncoordinated. For example, Ofgem's Electricity Innovation Competition and its precursor, the Low Carbon Networks Fund (LCNF) are seen as valuable to DNOs in understanding the opportunities, risks and the practicalities of new approaches but only one project was cited as having an explicit vulnerability focus. Another interviewee highlighted the lack of coordination between Innovate UK, innovation catapults, Research Council funding, and regulatory innovation money.

Government has allocated up to £70m towards smart innovation projects, and has established an Industrial Strategy Challenge Fund to encourage innovation. Its ambition is for "an energy system that works *for all consumers*, both now and in the future."[112] – it is important therefore that this inclusive approach is reflected in the focus of projects and the funding awarded by both existing and new innovation competitions.

It should be noted, however, that not all innovation requires substantial resources. We have identified a number of relatively 'quick wins' in our research that are outlined in the case studies.

[110] Companies may volunteer to pay a sum of money to appropriate charities, trusts or organisations in lieu of, or in addition to, a financial penalty for breaches of licence conditions. Companies may also volunteer these payments to remedy any harm to consumers, in addition to compensation to those directly affected, where Ofgem has not conducted a formal investigation.

[111] Ofgem has appointed the Energy Saving Trust (EST) as the independent Service Provider to manage and allocate voluntary redress funds. Authority guidance on the allocation of redress funds, Ofgem, 24 August 2017

[112] Upgrading Our Energy System: Smart Systems and Flexibility Plan, BEIS and Ofgem, 24 July 2017

Financial support for vulnerability innovation

Recommendation 7

Redress monies have been a valuable funding source for energy innovation that supports customers in vulnerable situations. We welcome Ofgem's Guidance on the allocation of redress funds that encourages a focus on innovation to support vulnerable customers. The Energy Savings Trust (EST) should ensure it has appropriate understanding of energy vulnerability issues and:

- Identify major gaps in current innovation funding for innovation that could support customers with additional needs
- Focus funding on where there are weak commercial drivers for innovation but high customer need i.e. so probably not smart prepay initiatives
- Require effective evaluations, sharing of innovation and lessons learned.

Recommendation 8

Innovation funding schemes paid for by customers and taxpayers' money, such as the government's Industrial Strategy Challenge Fund, should explore, where appropriate, how they can best incentivise companies to consider the needs of *all* consumers. This includes in their funding application and assessment processes.

Information regulation and reputational drivers

There has been strong support among government, regulators and some consumer groups for publishing data on performance and service to help drive improvements in company behaviour and service offerings *generally*[113]. Approaches include but are not limited to:

- League tables e.g. Ofgem's network SECV scores.
- Product and service reviews by consumer organisations e.g. Which? Best Buys
- Customer review sites e.g. Care Opinion (see box below).
- Company-led customer satisfaction scores e.g. Net Promoter Score (NPS)
- Benchmarking or ratings against set criteria e.g. Citizens Advice's five star customer service rating.
- Publishing enforcement action e.g. Ofgem' information on companies under investigation and decisions.
- Publishing comparative service information e.g. social obligations information on debt, disconnections and the Priority Services Register.
- Awards e.g. Utility Week awards

The argument goes that publishing data on regulated businesses' service or performance enables policy makers, consumers, third sector organisations and the media, to scrutinize the information, and compare and contrast companies. It can help inform customer purchasing decisions (e.g. energy switching decisions in the competitive market), be used to hold companies to account and to praise success. Reputation matters for both suppliers and networks, and perceptions or awareness of performance can impact levels of regulatory scrutiny; trust, confidence, investment, staff acquisition, retention and morale; and ultimately affect a company's bottom line.

[113]Philip Cullum, The use of data publication to enable reputational regulation, UKRN, July 2014

Views on league tables and other company comparative information

Most interviewees agreed that comparative company information does and could drive improvements in service for customers in vulnerable situations. However, there were mixed views on whether or not existing approaches do, or new approaches could, encourage vulnerability *innovation per se*.

League tables in general such as the electricity network's SECV are seen to "definitely make a difference" and are "paid attention to by company leadership". Others mentioned how for suppliers Ofgem's reporting data on debt, disconnections and the Priority Services Register is an important way in which companies benchmark their performance. One network reported they shared comparative emergency connection data with their regional depots and that this worked well to improve standards.

Companies' appetite to innovate to be the best and thus the impact of comparative data in driving innovation varied. For some companies, comparative benchmarking such as the SEVC were both *enabling* them internally to be more innovative (by facilitating sign-off and resourcing of projects) and *encouraging* them to be more innovative to support vulnerable customers. These companies actively want to be the best and see constantly improving their service as a way to achieve this. They also recognized the value of being at the top of the table to staff morale, retention, and general "pride in performance of being best in class". However, for others, it was more about "avoiding risk, not wanting to be in the bottom quadrant" or "out of step with the rest of the industry". The implication being however, even for those who aren't aspiring to be the most innovative, that a desire not to be the worse in an improving field will help raise standards for all.

Cautious support for greater use of energy company comparative performance data

There are relatively few mechanisms which compare energy company performance or activity in supporting customers in vulnerable situations. There was broad support (including within industry), for exploring greater use of vulnerability-related league tables and other comparative data. But this was not without its caveats and many raised practical issues which need to be considered. The main points raised are as follows:

- ***Clear aim*** – it is important to be clear of the aim of publishing data e.g. is the information meant to directly influence *all* customers, some vulnerable customers, the energy company leadership or employees. This will impact the channel used and design.
- ***Who does it*** – who publishes the information is seen as critical to how influential an approach would be. Data published by Ofgem and Citizens Advice was considered to have the most influence on industry behaviour. To matter to energy customers**,** information should be published by a known trusted brand relevant to the intended audience. Switching sites are a key vehicle to communicate comparative information, which can influence tariff decisions, but Ofgem only has limited influence over TPIs e.g. with the Confidence Code.
- ***Demand*** – interviewees highlighted that despite socially branded energy companies, it can't be assumed that customers will be motivated by information published on vulnerability related performance or wider social issues and that this needs further research. Though the initial evidence suggests at least some customer segments would be.
- ***Fair and comparable*** – it is important that published information is accurate and comparing like with like. Also, that there is enough differentiation to encourage innovation. For example, one respondent highlighted that the Gas Discretionary Reward funding approach doesn't enable sufficient differentiation between performance to maximize its impact.
- ***Timely*** – to maximize its influence, information has to be timely. A couple of respondents noted that the value of the social obligation data was diminished, as it can be up to a year behind. Company performance may have changed in that time. Similarly with consumers, if it is meant to influence switching decisions it has to be easily available when they are undertaking that activity.

- ***Unintended consequences –*** organisations have to be careful how they assess performance and set the bar. As one consumer group put it "if they are a leading company, there's risk that they think that their level of innovation is enough, for others if they are in the middle, it's a safe place to be. That encourages them all to be in mediocrity together".

Supporting innovation

Recommendation 9

Ofgem should consider collecting and publishing more comparative company performance information in relation to service for vulnerable customers – to help drive improvements within the industry.

Naming but not shaming

Most interviewees supported more naming of those companies that do well but perhaps not unsurprisingly energy companies were not as keen on shaming poor company performance. A number reported that Ofgem and consumer groups often talk about good practice by 'a company', but don't always name the company responsible. It was thought if the company responsible were named that this may encourage innovation and importantly *earlier* sharing of ideas as the company gets more credit if they do it first.

Companies and consumer groups were split over the value of 'shaming' companies for poor practice. All felt that it was important to share 'where the red lines are' and companies who had broken the rules. However, while some consumer reps thought fear of being shamed might catalyse improvements in service for vulnerable customers, others felt that fear of getting it wrong and being shamed for failure could also actively deter innovation in an already risk averse environment. In its new vulnerability report[114] Ofgem recently started to name and shame companies who had debt practices which were out of step with industry averages.

Awards

There was a general view that the desire to win awards doesn't drive innovation. Awards come afterwards, when companies submit innovative ideas for recognition. They do however help to improve service delivery and promote the sharing of innovation indirectly. They can catalyse improvements by boosting team morale and ambition, and act as a vehicle for sharing innovative practice. Individual performance awards are also seen a way to motivate individuals to drive innovation if they are seen as "a feather in their cap professionally". There was a lot of cynicism around the meaningfulness of industry awards and who issues an award influences how valued it is. Some highlighted that there weren't many awards focused on energy inclusion, and innovation to support customers in vulnerable situations in the widest sense with organisations – NEA and MacMillan's awards being a couple of exceptions.

[114] Vulnerable customers in the retail energy market:2017, Ofgem, October 2017.

New York Banking Ratings Index (NYBRI)

Contact: Raymond H Brescia – rbres@albanylaw.edu

The New York Bank Ratings Index (NYBRI) evaluates the nineteen largest banks in New York State by awarding points to each bank based on how well they meet consumer needs in twenty customer-focused categories. The NYBRI weighs each of these categories equally and the banks are given a total score of 100, listing them from highest to lowest. Consumers can also go to an accompanying website, to *customize* a ranking based on their own preferences – adjusting the weight given to a particular category. Categories include things like fees outside ATMs, overdraft practices, credit card fees, loan acceptance rates for different nationalities. In addition, the site also offers customers the opportunity to review the products and services of the nineteen largest banks.[115] This was developed by Albany Law School with assistance from the Empire Justice Center, which supports customers on low incomes, and the Association for Neighborhood and Housing Development.

Research Institute for Consumer Affairs (RICA) – Rate it!

Contact: Caroline Jacobs – CarolineJacobs@rica.org.uk

Rate It! is a website in pilot stage that allows disabled people to review products, including energy products. 49% of disabled people feel they only have some of the information they want when buying online or in-store and over 90% favour the idea of an online community where disabled people can share reviews.[116] Rate It! will assist disabled consumers to make informed choices about products that support their independent living – the project aims to: reach 500,000 disabled users and build greater industry awareness of the disabled consumer market. Reviews will serve to build retailer and manufacturers' understanding of disabled customers' needs and experiences. It is being developed by RICA, Leicestershire Centre for Integrated Living (LCiL) and Enabled by Design. Which? are also advising the project. It will be peer reviewed by Scope, Business Disability Forum and AbilityNet.

Strengthening consumer demand

Recommendation 10

Citizens Advice should develop information on supplier service for vulnerable customers that will allow cross-industry comparison of performance and potentially inform switching decisions. That is (a) information directed at customers with additional needs to help them compare service levels; e.g. so prepay customers can compare top-up options or non-disconnection times provided by different companies, (b) also, information for socially minded customers who may wish to support more inclusive suppliers.

Recommendation 11

We support the Extra Costs Commission's recommendation that vulnerable customers and those that represent them should be 'bold and loud' and build consumer power behind the purple pound and the grey pound. In particular using initiatives such as the disability review site Rate It!, they should speak out when companies do not meet their need to help drive improvements, including through innovation.

[115] http://www.nybri.org/ - This was developed by Albany Law School with assistance from the Empire Justice Center, which supports customers on low incomes, and the Association for Neighborhood and Housing Development
[116] Extra Costs Commission Final Report, Scope, June 2015 ,p32, p34,

Data access and use

All parties recognized the potential value of data in supporting vulnerability innovation, and many also highlighted potential risks. A number of industry interviewees suggested that data privacy regulation may be restricting innovation, which could help better identify, target and provide support for customers with longer-term or permanent additional needs. Others felt that there was much that could already be done with publicly available data, and companies existing data that isn't being utilized. The London Datastore was cited as an example of good practice[117].

There was a general view that innovative use of data to *proactively support* and *empower* customers in vulnerable situations has been slow to develop (particularly by suppliers) but is improving. As a number of our case studies show, there has been an increase in the strategic sharing of information between energy suppliers, networks, water companies and other agencies, which has helped improve how they identify, target and provide timely support for customers with additional needs. The Digital Economy Act 2017,[118] the standardisation of vulnerability 'needs codes',[119] and changes to the Priority Services Register licence conditions on data sharing are all expected to further facilitate this.

Some companies however are still not maximising opportunities to collect relevant data and analyse insights from their own operations and customer service functions. Nor are they always using publicly available information effectively to inform and improve their service for customers in vulnerable situations. Lack of in-house data skills and knowledge is deemed by some to be a barrier.

Data privacy regulation is also perceived as a barrier – adding risk and complexity, e.g. 'data-based innovation' may require bespoke infrastructure and the setting of parameters for sharing data to ensure valid privacy and security issues are addressed. A number of energy representatives reported they are reticent about "going anywhere near data" due to concerns about breaching privacy rules. Thus inferring it was a reason they hadn't used data more creatively to help those with additional needs. A couple of interviewees felt that limited access to customer experience data held by publicly funded bodies such as government departments, Citizens Advice and the Energy Savings Trust, was also limiting third parties ability to understand the problems customers face and innovate to address them. We outline views on big data and smart information on p.168.

[117] https://data.london.gov.uk/
[118] The Digital Economy Act 2017 will enable more sharing of information about customers' vulnerability between public agencies and water, gas and electricity companies, in particular to identify customers living in fuel poverty
[119] http://www.energynetworks.org/info/safeguarding-customers/safeguarding-customers-overview.html

7 Embedding innovation

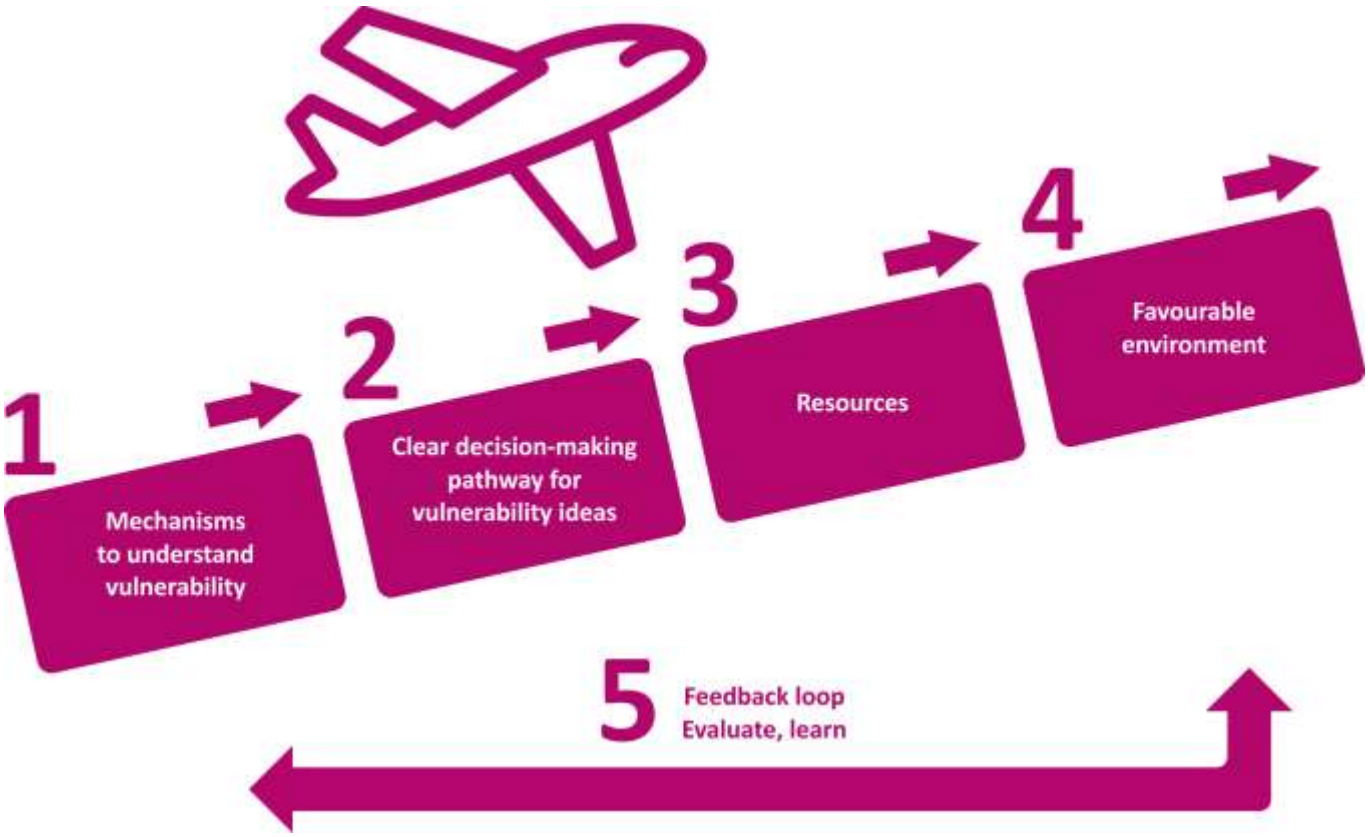
Sustainability First's Vulnerability Innovation Flight Path

Five steps to embed vulnerability innovation

We have developed a practical new tool – a five-step 'Vulnerability Innovation Flight Path' – to help companies and others think about the kinds of internal processes and company governance arrangements that they can implement or encourage to embed vulnerability and enable innovation for their customers with additional needs.

The checklist has been developed from feedback from our extensive interviews and our review of effective innovations. From this we identified some common factors that innovating energy companies and successful innovations have in common. It goes without saying that not all companies with successful innovations have all these elements but the five steps outlined are consistent themes in many.

Ofgem has stated that "not embedding a consideration of vulnerability can cause detriment to consumers. Detriment can represent costs to businesses, through inefficiencies and damage to reputation and customer loyalty."[120] In judging suppliers' conduct in respect of the new vulnerability principle and the networks' eligibility for incentive rewards we would expect Ofgem to look at the internal arrangements that companies have for identifying and developing better ways of delivering good customer service to vulnerable customers. This tool is also intended to support that process.



[120] Vulnerable Customers in the Retail Energy Market, Ofgem, October 2017, p19

STEP/ENABLER 1 – The company has mechanisms in place to understand the experiences and additional needs of their customers. This generates ideas for innovation.

Companies have mechanisms to help them understand their customers' additional needs and the challenges they are facing. These channels generate or inspire ideas for vulnerability innovation. Sometimes these are 'light-bulb moments' for improvements, which are quickly implemented, other times the ideas grow slowly and are the product of individuals joining the dots between the problems faced by customers and their own ideas for solutions. Typically, innovating companies do a combination of the following to build understanding and identify ideas:

- ☐ Have **effective and strategic working relationships with organisations working with vulnerable customers.** Companies strategically identify the best partners to work with. They are realistic about the limits of their own expertise. They treat charities as subject-matter experts, consultants and allies in the development of solutions and reward them properly. These partnerships are valued and help to identify customer needs and can lead to solutions. Partners are then involved in the project throughout, often including delivery, e.g. British Gas' Clic Sargent initiative was suggested by the charity (p.96). Some companies proactively work with charities to 'co-create' innovations.
- ☐ Proactively **monitor and research** the experience of their vulnerable customers, e.g. Western Power Distribution, a consistent 'winner' of Ofgem's network innovation awards, monitors vulnerable customer satisfaction. This helps to identify areas where new initiatives are needed.
- ☐ **Externally benchmark**, e.g. external auditors often share cross-sector good practice and new ideas, i.e. a handful of energy companies hold or are working towards BSI's Inclusivity Standard (p.135) and Action on Hearing Loss's Louder than Words Charter Mark (p.137). These kinds of standards also encourage and support companies to set up structures which build-in considerations of vulnerability from the start of the decision-making process.
- ☐ **Proactively seek out innovative** approaches, e.g. attend relevant events/meetings and support projects. For example, via Project Inspire Western Power Distribution identified the potential for video sign translation (they are using Interpreter Now) and next generation text relay service. The Gas Locking Cooker Valve (p.74) was drawn to SGN's attention at a conference by the charity Dying to Keep Warm.
- ☐ **Train, support and empower staff on vulnerability** – this helps to build understanding and enables action. Staff are better placed to spot need and have the flexibility and autonomy to capitalise on opportunities. They are 'confident enough and able to care', e.g. Utilita's frontline staff initiated their approach to supporting prepayment customers who are self-disconnecting, and were trained by StepChange (p.154).
- ☐ Draw upon their **staff's experiences** so they are agents of change, e.g. npower staff volunteering at food banks informed their Fuel Bank (p.92). SGN has 'Ignite' a mechanism through which staff can share ideas. Their Neighbourhood Alert (p.79) came from this route.

Understanding the needs and expectations of customers in vulnerable situations is key to stimulating new ideas and solutions to improve service and quality of life.

STEP/ENABLER 2 – There is a clear decision-making pathway for vulnerability ideas

Successful innovations always have someone championing them but they need to be supported by the wider organisation in order to succeed. In larger companies it also helps if a senior level colleague is personally supportive. The initiator is clear what they need to do, and who they need to speak to, to get a decision made on their vulnerability innovation. The pathway through which an idea travels to get approval is transparent, structured and known by staff:

- ☐ We found most organisations with successful innovations had a **dedicated vulnerability person or team**. This person plays a critical role in championing ideas and selling them internally to different parts of the organisation. To prevent them from being siloed, vulnerability is also embedded throughout the organisation, e.g. it's a leadership/strategic priority and/or there are nominated people responsible for vulnerability in their departments. In smaller organisations this doesn't seem necessary.
- ☐ In flat or medium-sized organisations it seems often the person championing the idea takes it to the head of the relevant team for a decision. That person has the **power and flexibility to make decisions and a budget** to support them. Simple changes can be made quickly. Only decisions involving significant resource have to be escalated.
- ☐ In larger more hierarchical organisations there also tended to be a **designated vulnerability team or individual** who have some autonomy to make decisions (though not always budgets). In addition, importantly there is typically a **cross-departmental mechanism that meets regularly**, which brings together people and ideas from different departments and different parts of the organisation for discussion and decision. Importantly it has **the authority and budget** to make decisions, e.g. **British Gas' governance structure** (p.136).
- ☐ Some companies also have regular '**standing channels**' through which ideas can formally travel from frontline staff to key decision-makers, e.g. British Gas Staff Carers' Forum meets regularly and raises ideas. SGN proactively seek staff members' views via their 'Ignite' initiative where staff can make suggestions. A number of organisations have customer panels.
- ☐ If leadership is driving the innovation, these processes are not always needed. However, this is rare. **The overwhelming majority of innovations we identified were initiated by frontline staff, middle management or external actors who approached the company with ideas.**

STEP/ENABLER 3 – Ensuring available resource

Unless it's a very simple initiative, resource is usually needed to support the innovation and make it happen. This includes staff time, expertise and, most importantly for substantive projects, financial resource and additional staffing. Some suppliers were a little shy about talking about the funding source for their innovations so we have not attributed all of them. We identified the following sources:

- ☐ Ring-fenced vulnerability team budgets with sufficient flexibility to pay for new ideas.
- ☐ Allocated price review spend (networks only) e.g Western Power Distribution's initiatives.
- ☐ The company's innovation fund e.g. NGN's Community Promises Fund (p.139).
- ☐ Funds allocated from enforcement and fines – 'redress monies'
- ☐ Un-reclaimed account balances money/unallocated prepayment payments (suppliers only).
- ☐ Operational budgets, e.g. Utilita's Smart Prepay Self-disconnection Support (p.154).

STEP/ENABLER 4 – Receptive environment internally and externally

The environment that the innovative idea lands and grows in is always favourable and sometimes driving innovation. A number of factors can support this:

- ☐ **LEADERSHIP** – The company's **leadership and senior management** support and understand vulnerability. For example, E.ON board members each sponsor customer immersion events, including those with customers in vulnerable situations. Vulnerability is also a recognised organisational priority: the company has a vulnerability strategy so the person championing the idea can demonstrate how the innovation supports and fits within this agenda and 'use this hook to mobilise support'. In some instances, leadership is challenging staff to come up with an idea to address a problem. Importantly, they ensure that Steps/Enablers 1–3 are in place.
- ☐ **REGULATION** – The **regulatory** environment is **encouraging** action in the area of innovation. This can include 'signals' from Ofgem's senior leaders outlining expectations or regulation itself. A number of companies talked about innovating in order to be ahead of regulation they could 'see coming over the horizon'. Internally they use impending regulation to push for and persuade leaders of the need for innovation. Regulatory change can prompt wider vulnerability innovation, e.g. as one supplier put it, 'while the hood was up on the Priority Services Register' this prompted them to review their whole approach.
- ☐ **'POLITICAL'/MEDIA CLIMATE** – The wider **political** environment can be a key driver. Feedback or influence from parliamentary committees, charities, government and the media encourages the company, in particular, its leadership, to focus action on and support action in a particular area. In many instances this has been a primary enabler for innovation. A desire to get back in the regulators' good books and improve reputation following some kind of negative incident or enforcement decision can also drive support for innovation to support vulnerable customers.
- ☐ **EXTERNAL SUPPORT – charities** and other parties are **supportive of or endorse the approach**. This can help to add credibility, mitigate risk and encourage senior leadership and the media to support. External support can influence when action is taken, e.g. if it's timely or practical due to an external scheme or programme.

STEP/ENABLER 5 – Feedback loops

While not all successful innovations had feedback loops, companies who repeatedly seem to innovate, report that they do. They have mechanisms in place to systematically monitor, learn from and evaluate initiatives and activities and this learning is shared and informs the second phase of the project or the next innovation. In their vulnerability report Ofgem stated that they want to see more evidence that suppliers are using customer feedback loops to understand the needs of vulnerable consumers to inform their decisions, products and services.

Embedding inclusivity into energy company culture

Recommendation 12

To be most effective, energy suppliers and networks must embed vulnerability into their organisational structures. For example:

- Develop and regularly update their vulnerability strategy
- Ensure they think about the implications of key decisions on different customer segments
- Design services inclusively
- Train and empower staff so that they have the flexibility, autonomy, skills and 'confidence to care' and to innovate
- Recognise staff for their successful vulnerability innovations – big and small.

Recommendation 13

All energy companies should ensure they have a clear 'pathway' or 'flight path' for ideas to flow from all levels of the company and from outside their organisation to a decision and, if successful, to delivery. For example, they should have:

- A known person/s with responsibility for vulnerability decision-making
- Mechanisms to capture ideas from front-line staff and partner organisations
- Where appropriate, cross-departmental mechanisms to share insight, ideas and facilitate decision-making.

In judging suppliers' conduct, including in relation to the vulnerability principle, and the networks' eligibility for incentives, we would expect Ofgem to look at the internal arrangements that companies have for identifying better ways of delivering good customer service to vulnerable customers. In this report we outline examples of good and innovative practice to embed innovation for customers with additional needs.

Embedding innovation and vulnerability case studies

British Gas:

Dependency Friendly Organisation

QW W

Overview

British Gas is one of ten organisations invited by the Prime Minister's Dementia Challenge Group to model what it is be a fully dementia friendly organisation. BG has chaired a working group which is writing guidance on best practice for utilities in being a dementia friendly organisation.

Need

850,000 people in GB have dementia today, so British Gas estimate at least 100,000 of their customers live alone, in their own homes, with the condition and as many again live with others in households served by British Gas. Many also live with partners who have dementia.

Approach

- Reviewed their **operational processes** e.g. changed approach to Power of Attorney – invited government's Office of Public Guardian to review systems.
- Introduced **new training** – recruited and trained over 50 Dementia Friends. Between them, they have been responsible for creating 10,500 Dementia Friends across British Gas (as of May 2017). Training involves face to face sessions as well as 30 minute module.
- Staff are offered paid time off work to become Dementia Friends or can use one of their two volunteering days
- Sharing experiences and learning: worked with staff carers network; encouraged staff to get involved in their local Dementia Action Alliances. E.g. hosting meetings, talking about dementia in local schools and scout groups; supporting Southampton's drive to become a dementia friendly city. They also offer a drop-in centre at their Southampton office so customers living with dementia can talk through any energy needs with one of their Dementia Friends at the site.

Where used: British Gas.
Contact: Steve Crabb - Steve.Crabb@britishgas.co.uk

Developed by: British Gas in partnership with the Alzheimer's Society and Alhzeimer's Scotland

Impact: Quantitative analysis is not yet finalised. Initial feedback:

- Employees to gain a deeper understanding of the disease and the impacts to customers and the business.
- Qualitative feedback has shown that frontline employees have been able to use their new understanding of Dementia to support customers on the phone.
- Frontline engineers have also stated that they now recognise certain customer behaviours and have committed to acting differently in the future.
- Positive PR and they have had customers call up and specifically ask to talk to a Dementia Friend.

Supported by: Prime Minister's Dementia Challenge Group

Lessons learnt: Face to face training better than the 'sheep-dip approach' showing videos on screens or emailing booklets in the hope that staff would read them.

GP Paul Hodgkin:
Care Opinion

Overview

Care Opinion is an independent feedback platform that allows users of UK health and care services to give narrative feedback — to 'tell their story' of their care. This is a valuable source of information on patient/carer experiences which is being used to inform learning and improvements. Similar approaches may be possible in the energy sector.

Approach

Customers post their qualitative experience on the website. The story is made public and then sent to staff so they can learn from it. The site encourages both positive and negative feedback to be shared and shows a balance of both types of feedback on the site.

Reported benefits:

- More than 200k stories have been shared.
- The site is 'listened to' by more than 7,100 NHS staff
- 76% of issues received a response and reportedly 3% lead to change.
- It provides reporting, analytic and engagement tools to subscribing organisations
- Health organisations are encouraged to subscribe to the collective learning of the site to use it to drive improvements. They use the information to:
  - plan how to develop and improve services.
  - understand the choices that patients are making in their health care.
  - give doctors, nurses and managers a feel for what patients are saying about the service they manage.
- The Care Quality Commission receives all published stories and uses them to improve services.

Developed by: Paul Hodgkin – a GP in Sheffield

Supported by: Oxford Health Experiences Institute Oxford University, CLA HRC Yorkshire and Humber, Care Quality Commission

Launched: in 2005 in South Yorkshire and across the rest of the UK in 2006

Contact: www.careopinion.org.uk

Where used: By more than 600 healthcare organisations in GB. Also operates in Ireland and Australia.

Potential: Any energy company could create such a site to learn from their customers experience

BSI:

Inclusive Services Standard



Overview

BSI standard BS 18477 for Inclusive Service Provision is a framework to help organisations provide a fair and flexible service that can be used by all consumers equally, regardless of their health, age or personal circumstances.

Approach

BSI discusses and identifies with the organisation the relevant part of the Standard for their business. Their specialist Audit team conducts a top down assessment of the organisation's approaches. Following the assessment BSI issue a report to the organisation identifying the strengths and opportunities for improvement.

Reported benefits:

- Embeds inclusivity into 'business as usual'. Ensures that everything is designed with vulnerability in mind, not an add on afterwards
- Shares ideas as to how to identify consumers in vulnerable situations and respond to their needs more effectively
- Drives consideration of vulnerability across the whole organisation – means vulnerability is up front and centre in everyone's mind
- Perceived "value in external recognition that you are doing the right thing"
- Helps ensure and demonstrate that the company has a system in place to monitor, review and continuously improve their approaches to support customers in vulnerable situations

Developed by: British Standards Institution in combination with consumer organisations, charities and government bodies.

Contact: Lucy Robinson - pressoffice@bsigroup.com +44 20 8996 6330

Where used: A number of energy companies including Western Power Distribution, SSE, British Gas, WWU and NGN have been working with BSI in adopting the guiding principles of BS 18477

Potential: Any company can use it

Supported by: Ofgem and Citizens Advice and the Financial Conduct Authority have referenced the standard as good practice

Lessons learnt.

- "Contrary to expectations the process was relatively resource light."
- It is a "warts and all assessment."
- "It was painful! but is nonetheless very valuable."
- It's an on-going process - "I don't think you ever get there in terms of inclusivity, it's always evolving."
- "We were nervous beforehand but in the end thought 'what have we got to lose, let's see what shouldn't be there'. Being completely open and responsive has made such a difference."

British Gas:

Structures to support vulnerability



Overview

British Gas has set up a governance structure which ensures that that there is leadership, accountability, resourcing, and cross departmental working to support those in vulnerable situations.

Approach

BG's strategy for supporting customers in vulnerable circumstances is to work systematically to understand their customers' needs, by collecting insight from customers, and from expert bodies to continuously improve their existing service and to develop new and innovative ways to ensure all customers are treated fairly no matter what their circumstance is. A breakdown of this strategy and BG's hierarchy informing this, is as follows:

Director of Consumer Vulnerability – Corporate Citizenship has a dedicated team of up to 6 people with a conscious decision to create a senior level role to demonstrate commitment to inclusive approaches. They have a reserved budget for vulnerability insight and roundtables and an additional budget for discretionary spend. This is in addition to funding for general regulatory change e.g. changes to the approach to PSR.

They set up a dedicated **Consumer Vulnerability Monthly Steering Group**, which includes Heads of all relevant parts of the business. The group sets and reviews performance e.g. what percentage of calls resulted in identifying vulnerability. The Group also reviews external developments e.g. proposals out of government, Citizens Advice, research and other advice agencies. It provides a mechanism for sharing of information and updates.

Alongside this there is a **Quarterly Responsible Persons Forum**. In every area of the business there is one person responsible for vulnerability e.g. Director of Digital – ensure accessibility, Director of Field Operations, Communications, Marketing. The Board have signed off on this definition and policy to do the right thing for vulnerable customers. They also have sight of annual reports documenting support given to vulnerable consumers.

Where used: British Gas.
Contact: Steve Crabb - Steve.Crabb@britishgas.co.uk

Developed by: British Gas leadership team

Impact: It is particularly beneficial to a large organisation such as BG to ensure:

- The needs of customers with additional needs and inclusivity is central to the work of all departments. it prevents vulnerability from being dropped and seen as someone else's responsibility.
- Real accountability within every area of BG
- BG's approach ensures a systematic way of measuring and managing risk
- Enables the development of cross-area solutions to problems and therefore quicker development of solutions.
- Helps to drive continuous change and improvement as opposed to one-off show pieces of action
- Mechanism to raise issues and share ideas.

Louder than Words:

Charter Mark



Overview

Louder than Words is a nationally recognised accreditation for organisations striving to offer excellent levels of service and accessibility for customers and employees who are deaf or have a hearing loss.

Need

11 million in the UK are deaf or have hearing loss, including employees and consumers.

Approach

To become recognised by Louder than Words companies/utilities need to participate in four simple steps.

1. An Access Consultant benchmarks their approach against Louder than Words quality standards to complete a gap analysis on four key areas: People (i.e. staff and customers), Processes, Technology, Environment.
2. Louder than Words outlines a plan of action within an agreed timescale which they advise on and support with necessary organisational change.
3. At the end of an agreed time, Louder than Words then carries out an audit to see if the quality standards are being met. If successful, Louder than Words honours companies with the charter mark.
4. Companies can then display the certificate to indicate their commitment to improving access for people with hearing loss. Louder than Words registers this on their website and supports PR and marketing activity to publicise the award.

The Louder than Words charter is made up of 10 quality standards to determine the accessibility of companies for people who are deaf or have a hearing loss. Accredited companies are added to the "Roll of Honour".

Developed by: Louder than Words™ in association with Action Hearing Loss

Where used: Western Power Distribution, UKPN, United Utilities among other utilities including water companies.

Contact: Edward Rex and Clare Bowdler
edward.rex@hearingloss.org.uk
Clare.bowdler@hearingloss.org.uk

Impact:

- Increases service quality and customer loyalty
- Increases staff pride in the company and supports retention
- Helps meet the requirements of the Equality Act
- Helps demonstrate company commitment to inclusivity and equal access

Barclays:

Community Wings

IN QW W

Overview

Barclays have developed an internal qualification called the 'Community Wings' and a Vulnerability Tool Box. They are piloting this in the energy sector with a view to making it available for free to any energy company.

Need

It is important that all staff are able to recognise, understand and can appropriately respond to the additional needs of customers.

Approach

Community Wings is an internal qualification. Staff complete an interactive learning package which they can access via mobile or tablet. This aims to raise awareness and improve colleagues' understanding of vulnerability.

- It focuses on a number of key customer groups including: older customers, customers living with dementia or those who might be in financial difficulty, have a mental or physical disability or may be going through a traumatic life event.
- The package contains a series of modules that can be completed in any order with staff collecting points by answering questions and completing embedded activities.
- At the end of each module staff can test their knowledge of the various chapters that sit within a module. There is no pass mark but the more you get correct the more points you earn. You can retake the test if you don't get it right first time.
- As part of the qualification they also have to build and strengthen relationships within their local community and other organisations that can help customers. E.g. Become a Dementia Friend, run a carer's forum in conjunction with local charities, or run a fraud and scams awareness session with local police and trading standards.

Where used: Barclays. Being piloted with BG.

Potential: Any company will be able to use it for free once it is launched more widely.

Developed by: Barclays in associated with the Institute of Customer Service

Impact:

- Used by 21,000 Barclays staff – has helped them understand and respond to customers' diverse needs
- Very positive staff feedback – "Just completed a module on understanding the needs of customers with mental illness. Very helpful and eye-opening information so I can understand what some customers are going through."
- Staff learning and contacts from community outreach can inform our policies and approaches.

Contact: Zoe Dixon - zoe.dixon@barclays.com

NGN:

Community Promises Fund

IN QW W

Overview

Northern Gas Networks (NGN) have recently set up a Community Promises Fund which helps them identify new partners and support innovative programmes which can: help customers struggling financially and in fuel poverty and raise awareness of the dangers of carbon monoxide poisoning among other areas.

Approach

The Community Promises Fund aims to identify and support projects and innovative initiatives which help to alleviate hardship and other challenges associated with fuel poverty, educate around environmental energy efficiency ideas, raise awareness of the dangers of carbon monoxide poisoning and encourage the study of STEM subjects and related career opportunities.

This is an open competition publicised via local media. Selected projects receive grants of between £1,000 and £10,000.

Successful applicants attend networking events and share good practice and lessons learned and speak to the NGN team to access helpful tools and advice to support the projects.

Leeds Community Foundation (LCF), a charity dedicated to creating positive change in local communities, manages the Fund and distributes grants to successful applicants.

Lessons Learnt

"Sometimes you have to go a little beyond your core objectives to reach customers most in need."

Where used: Northern Gas Network
Contact: Tom Bell - tbell@northerngas.co.uk

Developed by: Northern Gas Networks with Leeds Community Foundation

Potential: Any energy company could do it.

Launched: 2016

Benefits

- Helps identify innovative approaches/new ideas which can subsequently be supported.
- Provides direct help to groups and helps NGN understand the issues. 11 projects supported in the first year.
- Helps identify and open lines of communication with harder to reach grass roots community organisations.
- Enables sharing of ideas and good practice
- Helps the company identify harder to reach community groups which they can subsequently work with e.g. The Syrian Community of Leeds.
- Helps NGN understand the issues faced by customers on the ground. e.g. access to information, support available from companies, training opportunities.

Toyah Wordsworth:

'Removing Barriers' board game

IN QW W

Overview

Removing Barriers is a board game designed to educate companies and their employees in the unintentional barriers they create to accessing a service or in the products they offer.

Need

Barriers are often overlooked simply because people don't realise they exist. The Removing Barriers game helps organisations, in any sector, to think about the issues disabled people might face when accessing their service, and what they can do to remove them.

Approach

Participants play a board game whose aim is to remove as many barriers for disabled people through buying adaptions or services.

It focusses on understanding physical, visual, hearing impairments and those with learning difficulties and mental health conditions.

The object of the Removing Barriers game is to remove as many barriers for disabled people through buying adaptations or services. The equipment consists of a board, 2 dice, 5 counters, 4 piles of Community Resource cards (12 cards in each pile), 12 Ownership cards, and play money, 12 players.

Where used: Energy companies, general organisations and schools under the Focus Group Games Group and Disability Awareness charity, Equal Equality

Contact: Toyah Wordsworth, founder
wtoyah@hotmail.com

Developed by: Toyah Wordsworth, who has a rare genetic disease called Freidrich's Ataxia that affects balance, coordination and speech. The game was launched by her company Equal Equality which provides Disability Equality Training (DET.)

Benefits: Advertises the benefits and need of DET through the creative outlet and accessibility of a board game.

- To reach a social, as opposed to an individual, (medical), model of disability through all training exercises and teachings.
- To challenge some of the common myths and false distinctions that relegate disabled people to the status of a discriminated-against minority.
- To demonstrate the practical application of equal opportunities policies for disabled people within the immediate area of work of course participants.

8 Smarter world: what's in it for customers in vulnerable situations?

Ofgem's Smart and Flexible Energy Systems Plan outlines an "ambition for an energy system that works for all consumers, both now and in the future."[121] Our research found that a 'smarter world' offers real opportunities to benefit customers in vulnerable situations but that some benefits are not guaranteed, or may be slow to develop for certain customer groups unless more concerted action is taken. To date, many companies do not appear to be thinking very actively about how technology and its installation could benefit customers with additional needs. Inclusive approaches to smart delivery are also not generally embedded and there are only a handful of initiatives underway beyond mainstream developments such as smart prepay and assistive living services.

With more than 8.5 million smart meters now installed in GB, we asked our 66 interviewees to outline their expectations of the smarter world. In particular, what key technological trends they thought could impact energy customers in vulnerable situations; the main opportunities to improve service delivery and quality of life; and the key challenges that need to be addressed. Based on their views we have outlined:

- The main technological trends of note
- Ten things a smarter world could deliver for vulnerable customers
- Ten steps they felt are needed to help ensure benefits.
- Five key recommendations to help ensure the benefits of innovation are deliver to customers in vulnerable situations

[121] Our strategy for regulating the future energy system, Ofgem, August 2017

Key technological trends impacting customer vulnerability

The GB energy system is changing more rapidly and fundamentally than any time since the Industrial Revolution. It is difficult to know precisely what the future will look like. Our interviewees varied hugely in the extent to which they had considered the future of energy and what this might mean for those with additional needs. But to varying extents most recognized that the way energy is produced, purchased, used, and the value created for consumers was changing. We have outlined these headline changes below, as they will have particular implications for vulnerable customers.

Smart meters

The government is committed to ensuring that every household is offered a smart meter by the end of 2020. Smart meters are the next generation of gas and electricity meters and offer a range of intelligent functions. All domestic consumers will be offered an In-Home Display (IHD) as part of the smart meter roll-out, which shows how much energy is being used, and how much it is costing, in near real-time. This information will help customers control and manage their energy use, save money and reduce emissions. Smart meters will also bring an end to estimated meter readings, providing consumers with more accurate bills.



Disaggregated metering or non-intrusive load monitoring (NILM)



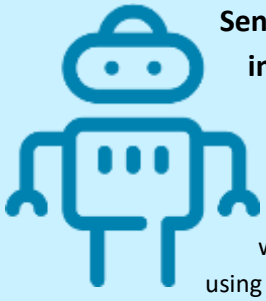
NILM[122] and machine learning are under development and have the potential to be used to identify energy consumption and usage including which appliances are being used when in the home. Highly granular data will enable a range of new services for consumers. Companies will be able to more accurately determine and predict patterns of consumption and appliance use, offer bespoke tariffs or buy energy more accurately on a customer's behalf. Digital energy insights can help to recognize occupants' activities or usage patterns that may indicate changes in health and wellbeing.

Cloud computing

The delivery of computing services – servers, storage, databases, networking, software, analytics and more – over the Internet ("the cloud") - has led to reduced cost of data processing and increased speed and performance. IBM's study[123] found five key ways that Cloud is increasing innovation. It enables organisations to: expand product/service features while improving ease-of-use; design sophisticated customer journeys tailored to unique customer preferences and contexts including those with additional needs; rapidly prototype, develop and deploy new products and services; reach new customers and; more easily gain entry to new industries or markets.



Sensors/actuators, artificial intelligence and robotics



Artificial Intelligence *is advancing* and increasingly creating a digital nervous system for the inanimate world: products have location data using GPS sensors; eyes and ears using cameras and microphones; and sensory organs that can measure everything from temperature, humidity and movement, to pressure change. Machines are increasingly able to recognise and interpret voice, language and facial expressions, make decisions and to some extent learn, adapt and improve. This is already resulting in new kinds of customer interfaces that are massively enabling communication for customers with disabilities.

[122] https://www.cornwall-insight.com/newsroom/all-news/the-secret-of-nilm?utm_medium=email&utm_campaign=Blog The secret of NILM&utm_content=Blog The secret of NILM+CID_a95cfb09b038c2c01bdd4fb7e4fd128d&utm_source=email marketing&utm_term

[123] https://www.ibm.com/blogs/cloud-computing/2017/05/cloud-drives-enterprise-innovation/



Smart homes and interconnected smart appliances

Recent years have seen the growth of so-called 'smart appliances' in our homes - some of which include the above-mentioned sensors and actuators. In a smart home, electronic devices can be connected to each other or other devices via wireless networks. They can operate to some extent interactively, autonomously and remotely. Typical smart home solutions involve the control and automation of lighting, heating (such as smart thermostats), ventilation, air conditioning and security (including movement sensing), as well as smart appliances such as washer/dryers, ovens or fridge/freezers. This has the potential to reduce fuel poverty and increase safety and peace of mind through automation of home energy, appliance management and remote alerts.

New ways to pay - digital payments and mobile money



Globally hundreds of millions of unbanked customers' are able to send money and make payments including online using their mobile phone as a wallet[124]. Cash can be deposited and withdrawn via local agents/shops. Transactions are fast, tariffs are relatively low. Registration can be simpler and faster than a local bank. As IoT continues to accelerate, it is also fuelling a shift in the payments landscape with the evolution of "Internet of Payments" (IoP), where connected devices can be enabled to make purchases with very little human intervention, and face recognition can 'authorise payment'. There is the potential for new ways including for unbanked customers – giving consumers greater budgeting control.

Internet of things



At a basic level, the 'internet of things' (IoT) is the result of connecting many appliances, objects and devices to the Internet and giving people new ways to communicate with them. It promises to bring together people, processes, data and objects to create new capabilities and more valuable networks. For customers in vulnerable situations it is the backbone technology of many of the smart and automated innovations in this list.

Big data and data analytics

More data and greater computing power at lower cost is driving a revolution in advanced analytics. This allows companies to better identify and respond to customers' and societies' priorities, needs, wants and behaviour. This includes the tailored needs of different vulnerable customer segments.



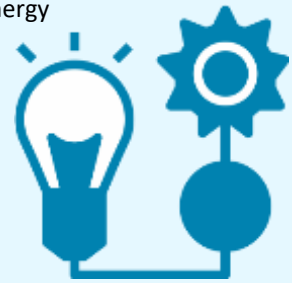
Renewables and decentralised energy

The cost of solar photovoltaics, wind and batteries have fallen rapidly. Innovation and competition are likely to continue to drive reductions in the cost of these and other technologies. As the costs of renewable and low carbon energy reduce, more and more residential consumers and communities are expected to install and co-own their own generation—be it roof-mounted solar panels, or gas-fired combined heat and power (CHP). This enables consumers to become 'prosumers' - sell power into the grid. See business models below.



Advanced building technologies and materials

The cost of advanced building technologies is falling. New energy-efficient technologies including low energy lighting (LED bulbs), smart glass (that can control how much sunlight passes through or absorb solar energy to create electricity), ultra-efficient compressorless heating, ventilating and air conditioning and heat pumps[125]. New technologies could help to tackle fuel poverty.



[124] https://www.gtnews.com/2017/01/06/five-fintech-predictions-for-2017/
[125] Cited in The disrupted decade: 4 disruptions that will shake things up for energy consumers, Citizens Advice, 29 November 2016, p9.



Electricity storage – battery and thermal

Electricity storage is fast developing as economically viable and easy to implement at a home and community level. Storage has the potential to dramatically reduce system operation costs and therefore reduce end consumers' electricity costs. Storage creates new opportunities for the electrification of other services, in particular transport, such as electric vehicles. Thermal storage is also developing with new materials and controls that may help lower the cost of home heat solutions for vulnerable customers. Those with mobility scooters may have their own battery storage – enabling them to more affordably manage their energy use.

Blockchain



Blockchain is a decentralised digital ledger which is transparent. Blockchain has the potential to revolutionise peer to peer trading and settlement systems, potentially removing the need for intermediaries such as energy retail companies. If regulation enabled it, it could potentially allow consumers to connect to and buy and sell energy without third parties. It could use smart grids and virtual trading platforms to re-invent traditional structures. It could facilitate the use of so-called "microgrids" where communities can produce and trade energy. E.g. where one solar-powered household reduces energy consumption by turning off appliances when on holiday, the surplus can be sold to a neighbour. The system is potentially faster, simpler and more fluid giving prosumers more control, leading to a more stable less wasteful flow of energy. Blockchain is the technology underpinning new kinds of digital currencies. It could provide new opportunities for unbanked customers, remove third party intermediaries, reducing costs, and enable more transparent and targeted social support to vulnerable customers.

New market models

Technological advancement coupled with social and economic change is catalysing substantive energy market change. In particular we are already seeing:

- An increase in smaller energy suppliers with more than 60 providers now in the market.
- Local authority / council-led energy companies with explicit social/fuel poverty aims[126].
- A growth in decentralised energy including community schemes with a strong social focus.
- Small pilots of peer to peer transactions supported by blockchain.
- New kinds of third party intermediaries e.g. automated switching services.

[126] https://www.cornwall-insight.com/publications/chart-of-the-week/chart-of-the-week/2017/local-councils-the-new-force-in-energy-supply?utm_medium=email&utm_campaign=Chart%20of%20the%20Week&utm_content=Chart%20of%20the%20Week+CID_f45da3450da2eeda2c8b833a1db1c4d2&utm_source=email%20marketing&utm_term=View%20Chart%20of%20the%20Week

Great Expectations? – stakeholders' views on the future

Interviewees were generally positive about the benefits that new technology can bring – believing that on balance it 'will make things better' for customers in vulnerable situations. Technology is seen at best as "a massive enabler", improving accessibility in particular, and as a minimum resulting in "incremental progress" for customers with additional needs.

However, consumer and disability representatives in particular stressed that technological solutions would not work for everyone and that alternate options had to remain.

There were strong concerns voiced that smarter technologies could exacerbate an already growing divide between those who have and can use technology, and in the long-run those who don't and who are already increasingly being 'left behind'. As one interviewee stated: "*For some it will all be too much*" – they may lack the skills, cognitive ability or confidence to use new technology. The speed of innovation can also mean "it's hard for some people to know something new exists before it changes, and they also need to be sure it is stable and reliable enough to use before making changes to their lives."

In addition, some interviewees noted that technological innovations that replaced face-to-face contact e.g. such as contact with a meter reader, or a shopkeeper when topping up a prepayment meter, could increase isolation and loneliness and reduce human contact which was so important for people with certain conditions. As one charity representative stated while "a robotic friend or dog might work for some, it is unlikely to be a solution for everyone".

While some interviewees were more circumspect about smart metering in particular, the majority was positive about the opportunities. Most agreed that "what you do off of the back of rollout and new technology" had the potential to deliver the biggest improvements in customer service and quality of life for those in vulnerable situations and those who support them.

There was however a dominant view from both industry and consumer groups that benefits are not guaranteed, or may be slow to develop for some vulnerable customer segments unless further action is taken.

Linked to the above, there were mixed views on the degree to which having a SMETS 1 meter rather than a more advanced SMETS 2 meter[127] would result in a different level of service for vulnerable customers. One interviewee suggested that there would be 10-14 million SMETS 1 meters on the walls by 2020, significantly higher than government's original intention. Some felt this was not a problem, as meters could be easily remotely upgraded and there would be sufficient numbers of the wall to see network benefits, others suggested it could mean that some appliances and services that customers rely on may not be fully interoperable, nor would the individual or collective benefits of 'last gasp' and 'first breath' functionality such as spending less time or having a better service when off supply (see p.160 below) be maximised.

We assume that most customers are unaware of the difference between SMETS 1 and 2 when they are offered a meter. It is unclear if customers will be able to request a free upgrade from their supplier or whether low-income customers will be expected to pay for this if their meter lacks the functionality they need.

The growth in 'smarter data' is a "double edged sword"

There is widespread recognition that smart meter data, and so-called 'big data' offer new and growing opportunities to improve service and quality of life for customers with additional needs. For example, a number of our case studies illustrate how data can be used to empower customers to more easily manage their energy use, budget, switch energy provider and to be and feel safe.

[127] Smart meters are expected to meet minimum common standards known as the Smart Metering Technical Specifications (SMETS). Companies must comply with the most up to date SMETS issued by government when compliant technology becomes available. In practice this means some smart meters will be more 'advanced' than others.

However, the growth in 'big data' was seen as a "doubled edged sword". The availability of data is seen to allow companies to discriminate in more sophisticated ways as it provides insights into consumers consumption, behaviours and financial situation. One stakeholder highlighted for example that they expected the open banking initiative to enable them to look at customers spending habits and be able to distinguish between those who 'genuinely' can't pay their energy bill because they are poor, and those who are simply bad at managing their finances or opting not to pay. This would have implications for their debt management strategies, which could be both positive and negative for consumers.

It was recognised that it was important to ward against increased profiling that could reduce product and service choice and result in worse deals for some customers, especially those with poor credit ratings. This was a view supported by a number of speakers at the UKRN's "Big Data, Bigger Challenges" – *how will markets serve consumers of the future* event in October 2017.

10 benefits a smarter world could deliver for consumers in vulnerable situations

The following section outlines 10 opportunities that a smarter world could deliver for consumers in vulnerable situations. Some of the examples outlined are innovations already available to customers including those with smart meters, others are at concept or pilot stage only. As with any new technologies there are risks as well as opportunities and in some instances substantial barriers to effective implementation.

1. **Greater financial control**
2. **An accessible in-home energy display**
3. **New interfaces – empowering consumers**
4. **Smart pay as you go**
5. **More affordable energy**
6. **Tailored advice and support**
7. **Blockchain – more targeted energy support?**
8. **Timely support during power outages and less time off-supply**
9. **Health monitoring and assisted living**
10. **Automation – of energy management and switching**

1. Greater financial control



In a smarter world, customers who struggle financially should have more tools, products and information at their disposal to help them better manage their energy use, budget and make payments more easily. Indeed, the August 2017 Smart Energy Outlook found that seven in ten people with smart meters feel more in control of the energy they're using and half are saving money on their bills.[128], e.g.:

- **Accurate bills –** smart meters are expected to reduce estimated billing and unexpected bills, which can cause anxiety and push customers into debt.
- **Visible energy use –** all homes should be offered an accessible In-Home Display (IHD) at no extra cost, which will give customers greater visibility over their energy costs (see below).
- **Budget alerts** – better budget management through **pre-agreed alerts**. Nine electricity suppliers and ten gas suppliers currently offer high consumption alerts, mainly through the IHD. We expect some suppliers to offer text or email alerts for customers when they reach an agreed consumption level, or bill payment alerts when bills are due to help customers not to go overdrawn when money is deducted.[129]
- **Greater payment flexibility and choice** – smart technology makes it easier for customers to choose when they pay for their energy, and how they pay – combining and changing approaches to help them balance their finances. There are relatively new payment options such as mobile money, which could potentially develop to offer solutions for unbanked energy customers.
- **Truly fixed priced deals** – smart meters facilitate 'all you can eat energy deals', e.g. Green Star's Energy Unlimited Tariff[130] – where customers pay a fixed price no matter how much energy they use. While the deals are not without controversy and can be more expensive, many customers seem willing to trade certainty, including over the seasons, for higher cost.

[128] Smart Energy Outlook, Smart Energy GB, August 2017.
[129] According to Ofgem's vulnerability report: 'Most suppliers offer these alerts via the In-Home Display (IHD). Two suppliers offer email alerts, and three offer text alerts. Nine electricity suppliers and ten gas suppliers offer high-consumption alerts, mainly through the IHD.' Vulnerable customers in the retail energy market:2017, Ofgem, October 2017.
[130] Green Star's Energy Unlimited Tariff offers a fixed price no matter how much energy the customer uses. Three tariff options are offered, based on the size of the consumer's residence. Citizens Advice reports that prices are set approximately 14% higher than Green Star's fixed tariff rate. With smart meter data, tariff rates can be based on actual consumption and can be tailored by companies to minimise financial risk from high usage. See https://www.mygreenstarenergy.com/Our-Energy-Tariffs/Unlimited-Tariff

2. An accessible in-home display

All homes will be offered an In-home Display (IHD) as part of the smart meter rollout that will show them, among other things, near real-time information on how much energy they are using in pounds and pence. Evidence[131] from the government's Early Learning Project indicates the IHD is a key tool to help customers realise the expected energy savings, control and convenience benefits of smart metering.

Government requires that the In-Home Display is designed to enable the information displayed on it to be easily accessed and presented in a form that is clear and easy to understand, *including* by consumers with impaired:



sight



memory and learning ability



perception and attention and/or



dexterity.[132]

Under the Smart Metering Installation Code of Practice (SMICOP) suppliers must also, when they install a smart meter, show customers in 'an easy-to-understand way' how to use the smart metering system and information available, including the IHD. There is a specific requirement for this demonstration and associated materials provided to be 'informed by' any specific needs or 'known vulnerability' that the customer may have.[133]

[131] Consultation on amending Smart Meter In-home Display License Conditions, DECC, 3 August 2015.
[132] The Smart Metering Equipment Technical Standards (SMETS), Chapter 6, paragraph 6.3, p. 96.
[133] Smart Metering Installation Code of Practice, Ofgem, April 2013.

geo:
Trio II Accessible Display

AC IN QW W

Overview

The Trio II Accessible Display is an 'RNIB Approved' inclusively designed in-home display that is designed to be more accessible and easier to use, especially for customers with additional accessibility needs including blind and partially sighted customers. Several energy suppliers, including five of the 'big six', have reported they plan to offer this display to their customers.

Need

Mainstream IHDs do not generally cater for people with additional accessibility needs. Potential alternatives such as smart apps, online portals and voice-activated home hubs remain unusable or inaccessible for substantial numbers of the population e.g. 19% of UK adults have multiple disabilities, dexterity, reach, sight, cognitive and mobility problems and significant numbers have never used the internet and do not have access to smart phones. The findings from the government's the Early Learning Project (ELP) Consumer Survey and Qualitative research supports the need for accessible IHD. Older smart meter customers, those from lower social grades, those with the lowest total annual household incomes (below £16,000), those with no formal qualifications and those who live with someone who had a long term health condition were less likely to say the IHD was easy to use or to say they knew how to operate its different functions.

Approach

The IHD displays real-time and historic information on the home's consumption of electricity and/or gas using data from installed smart meter(s) operating either in 'credit' or 'pre-payment' mode. It has been inclusively designed in collaboration with RNIB to receive the 'RNIB Approved' certification, with text-to-speech, large tactile buttons with positive feedback, non-slip feet and an easy-to-hold ergonomic shape that can be handled easily, and a high contrast colour screen with large crisp text, optimised for visual impairment and colour blindness.

Challenges

Customers may be unaware of their right to request an 'accessible' energy display when their smart meter is installed. There may also be a lack of understanding by energy suppliers of the needs of energy consumers for an 'accessible' version of a smart energy display.



> *Mainstream IHDs do not generally cater for people with additional accessibility needs. Potential alternatives such as smart apps, online portals and voice-activated home hubs remain unusable or inaccessible for substantial numbers of the population.*

Benefits

The cross-industry approach to designing and procuring the IHD means that the development costs are shared, making it economic to provide a display for energy consumers that might otherwise miss out on the benefits of smart meters.

- ✓ The text-to-speech function enables blind and partially sighted users to navigate and understand their energy consumption with ease.
- ✓ The large tactile buttons, ergonomic design and non-slip feet enable those with dexterity needs to operate the display.
- ✓ The optional Wi-Fi module enables the display to work with current and future online services, opening up a world of possibilities for 'accessible' online services.
- ✓ Positive feedback from initial RNIB testing.
- ✓ Designed for easy access to 'pay as you go' information e.g. IHD makes checking the pre-paid balance simpler.
- ✓ For those with a 'credit' based energy account, the budget function allows customers to manage their energy costs easily, providing peace of mind
- ✓ The display meets all of the requirements for the government's smart metering IHD specification and supports suppliers' key accessibility compliance requirements.

Developed by: geo in collaboration with RNIB and EnergyUK.

Contact: Simon.Hughes@geotogether.com
01223 850210

Potential: Any consumer with or without accessibility needs may benefit from this. Prototypes have been tested by RNIB and will be offered to customers for installation from mid- to late 2018 by the largest ten suppliers.





Above: photo courtesy of Bromford Labs[134] who have been testing the general usability of Alexa with visually impaired customers.

3. New interfaces – empowering customers

Machines are increasingly able to recognise and interpret voice, language and facial expressions. For example, Microsoft's speech recognition technology is reportedly able to transcribe conversational speech as well as (or even better than) humans[135]. A new lip reader out of Oxford called LipNet is 1.78 times more accurate than human lip readers in translating the same sentences. While technological solutions may not be suitable for everyone, this kind of artificial intelligence (AI) is already resulting in new kinds of customer interfaces that can massively enable communication for customers with disabilities and provide more choice of ways in which to engage at a lower cost.

Intelligent virtual assistants such as Google Assistant, Amazon's Alexa voice assistant are already being piloted by companies as a way to access information on a smart meter, the web and control devices using a home automation. This kind of technology could help customers with a range of disabilities to access energy information and control their energy use.

> *"Alexa, what's my bill?"*

> *"Hey Siri, how much electricity does my fridge use?"*

[134] http://www.bromfordlab.com/lab-diary/2017/1/25/testing-alexa-update
[135] http://www.huffingtonpost.com/entry/top-10-tech-trends-transforming-humanity_us_586aa003e4b014e7c72ee305

Microsoft:

Skype Translator

AC IT QW W

Overview

Microsoft Skype's translator can translate conversations in near real-time into a number of languages and is designed to empower literate deaf and hard of hearing users by providing an easy and convenient way of communicating.

About and benefits

Users can make audio calls, video calls or use instant messenger. With calls, when the user converses in their native language the speech is automatically translated from one language to the other in near real-time. The text transcript appears on screen for the recipient to read. The current version supports 12 languages for voice/video calls and 50 for instant messenger (at the time of writing - English, French, German, Hindi, Chinese (Mandarin), Japanese, Italian, Spanish, Portuguese, Arabic, Levantine Arabic and Russian).

For deaf and hard of hearing users, they can speak to the other person and read their response on a smart phone, tablet or computer, or users can type and read if they are not able to speak. Skype Translator brings together the AI technologies of speech recognition and machine translation, with verbal communications. These AI technologies will continue to advance and get smarter the more they're used as they are machine learning based.

Developed by: Microsoft

Contact: Tom Pilla - tpilla@microsoft.com

Potential: Energy companies. This kind of technology may offer a low cost, scalable, more convenient alternative to pre-booking a translator or traditional text relay systems. It is available as a standalone app and integrated into the Skype for Windows desktop app. The API that powers Skype Translator is publicly available as service for businesses that want to add speech translation to their custom apps and solutions.

For more information:
https://www.youtube.com/watch?v=QH3zpsQma9c



Photo: Ted Hart (above) went deaf at 13 from mumps. He has helped to test Skype Translator and ensure it meets the needs of deaf and hard of hearing customers.

4. Smart pay as you go

The majority of interviewees cited smart pay as you go (PAYG) energy as a key benefit of smart metering. Around 15% of prepayment customers have smart meters.[136] While not without its teething problems, smart pay as you go energy addresses a number of historic problems faced by prepayment meter customers. Benefits include the following – the precise services available to a customer will depend on their supplier:

> *Moving from standard prepayment to smart prepay - It's like going from a twin-tub to an automatic*
>
> **Industry rep**

Greater choice and convenience when topping up, e.g. you can top up via text, phone, laptop, smart app as well as cash. This helps to reduce disconnection in error when a customer can't get to a top-up.

Smart data and the ability to remotely top-up will make it quicker and easier for suppliers to identify customers who are self-disconnecting and provide timely support, e.g. companies can provide real-time meter credits rather than waiting for a wind-on or replacement payment card (see Utilita's case study below).

The ability to monitor usage via an accessible IHD, online or smart phone app. This is particularly useful when meters are located in hard-to-access locations in the home or outside and so are hard to monitor if they are low on credit. At the time of writing all but one of the suppliers currently installing smart meters (13) offer low-credit alerts.[137]

Customers can switch between payment methods without a meter exchange – reducing cost and inconvenience.

The ability to transfer money between gas and electricity meters – if a customer has sufficient money on one meter and not enough on another.

Text, email or audio alerts on an IHD to let customers know when they are running low on energy.

Smart meters make it technically possible to offer gas friendly credit (no-disconnect periods) as well as for electricity.

Reduction in stigma – Pay As You Go energy for all and not just for the poor.

More competitively priced tariffs as smart prepay should have a lower cost to serve – reducing pre-cap price differentials.[138]

[136] Vulnerable customers in the retail energy market:2017, Ofgem, October 2017.

[137] Most suppliers offer these alerts via the In-Home Display (IHD). Two suppliers offer email alerts, and three offer text alerts. Vulnerable customers in the retail energy market:2017, Ofgem, October 2017.

[138] Modelling undertaken for NEA indicates that in a cap-free world, between 95,000 and 181,000 households would be brought out of fuel poverty as a result of switching to a cheaper smart PPM tariff. The modelling did not factor in changes in customer behaviour affecting their ability to reduce consumption and so save money. Smart Prepay and Fuel Poverty, NEA, October 2016. A higher proportion of PPMs are smart (14% and 16% for electricity and gas respectively) compared to credit meters (12% and 10%).

Utilita:

Smart Prepay Self-disconnection Support



This innovation won Sustainability First's Energy for All Affordability Bronze Award

S ID AF AC IN QW

Developed by: Utilita

Contact: Alison Russell, alisonrussell@utilita.co.uk

Overview

Utilita offer a package of measures to support its smart prepay customers who are at risk of self-disconnection or who have already self-disconnected. This includes a wide choice of top-up methods, extensive friendly credit periods, running a weekly report to identify PSR customers that have gone off supply and proactively contacting those customers to check if they need help. Customers identified as off-supply receive a tailored package of support thanks to smart energy usage insights.

The Need

Utilita's core business is provision of smart prepayment services. Due to the company's customer demographic many of their customers may have a situation where they can't afford to top up their meters on a temporary basis. This can result in long and short periods of self-disconnection. For those who are particularly vulnerable this can be a particularly serious issue. Proactive identification of vulnerable customers off-supply and appropriate contact is necessary.



Left: Utilita's smart prepay display.

Approach

Utilita's package of measures includes:

- A wide choice of top-up methods – by phone, text, online, any Paypoint outlet – helping to prevent self-disconnection in error.
- Extensive non-disconnection hours that prevent the customer from self-disconnecting between 2pm and 10am, and also over the weekends or on bank holidays.
- A weekly check of all PSR customers off-supply when the weekend Friendly Credit hours have expired on a Monday. Utilita then proactively calls those that have self-disconnected, prioritizing PSR customers known to be vulnerable and offers them the package of support outlined below. Not all customers off-supply need support. For example, sometimes the household is on holiday or deliberately self-disconnecting gas during the summer months.
- For all customers identified as being in financial difficulty Utilita will:
  - Seek to identify vulnerability and update PSR details with any new information to ensure records are up to date.
  - Ensure customers are aware of support available, including where appropriate the Warm Home Discount
  - Use insights from smart metering data to provide tailored energy efficiency advice
  - Offer other ways to pay as appropriate, including by Fuel Direct and helping customers transfer to direct debit without requiring a security deposit
  - Signpost customers to charity StepChange who offer free impartial debt advice.

- If appropriate provide tailored discretionary credits linked to the customer's actual energy usage. Using smart meter data Utilita can calculate how much energy the household will need until they can afford to top up again. The necessary credit can then be immediately remotely applied to the meter. No additional charges are made to customers, though the credit does have to be repaid. Historically, the customer would have to call up and would only be eligible for one discretionary credit a year. Now they are either proactively called or can call up and, providing there is little to no debt on their meter or they are not already in receipt of more than one discretionary credit, they are eligible for a temporary discretionary credit to get them back on supply.



- Energy efficiency advice should be proactively offered to all customers in financial difficulty not just on request or if a discretionary credit is made.
- Creating a specialist team with correct training takes time, resource and investment.
- The customer won't always be open about having a vulnerability or debt problems. For this reason, Utilita team members are not assessed on how quickly they can get through their calls, but on how they have managed to help the customer, their customer care skills and approach.
- The initial team had four advisors. It was quickly identified that additional resource was needed to support the number of vulnerable customers calling the contact centre for help.
- It is important to effectively monitor referrals to StepChange to ensure the approach is working. Signposting alone is often not sufficient.

Benefits/impact

- On average the company identify 100-300 customers on the PSR off-supply each week
- Tailored smart top-ups for customers off-supply typically range from £5-£70 in value depending on need.
- The provision of StepChange details, the structured approach to encouraging customers to seek debt advice and the tailored energy efficiency advice, helps prevent or reduce energy debt build up. However, Utilita do have some cases of customers who contact them for a discretionary credit repeatedly or on a regular basis.
- Utilita's Customer Care Team took a total of 18,296 calls Dec. 2016 to April 2017 from customers in financial difficulties.
- Around 70-80% of customers referred to Utilita's team have a tailored discretionary credit as the outcome.

> *I think the work we do on the PSR is so important, having a sister with special needs it always feels good when you are able to help someone who may think they have nowhere else to turn. A customer I spoke to yesterday told me he had a bag of his possessions that he was going to sell, if we had not been able to help him. It's a very rewarding job.*
>
> **Ryan -**
> **Utilita Customer Care Team**

5. More affordable energy

Electricity battery storage is fast developing as economically viable and easy to implement at home and at community level. Alongside this the cost of solar photovoltaics and wind has also fallen rapidly. The SPECIFIC Innovation and Knowledge Centre, a consortium led by Swansea University report from a small pilot that energy consumption could be cut by 'by more than 60% – if homes were designed to generate, store and release their own solar energy'.[139] This is not without challenges, however. For example, although the costs of technology are coming down, the fixed cost of coming off the grid is likely to remain a barrier.[140] In addition, while there may be mechanisms in place for customers to avoid large upfront purchasing costs, e.g. 'rent a roof' solar schemes, these have historically not always been good value and can lock in the customer.

geo: Hybrid Home

Developed by: geo
Contact: Simon Hughes - Simon.hughes@geotogether.com - Tel: 01223 850210
Potential: In early phase of development. The approach is particularly suited to new builds, including flats and rental properties, enabling more affordable homes to also be more affordable to run.

AF IT W

Overview

geo's home energy management system has the potential to reduce average household energy bills by *at least a* third, enabling people to stay warm and comfortable for less.

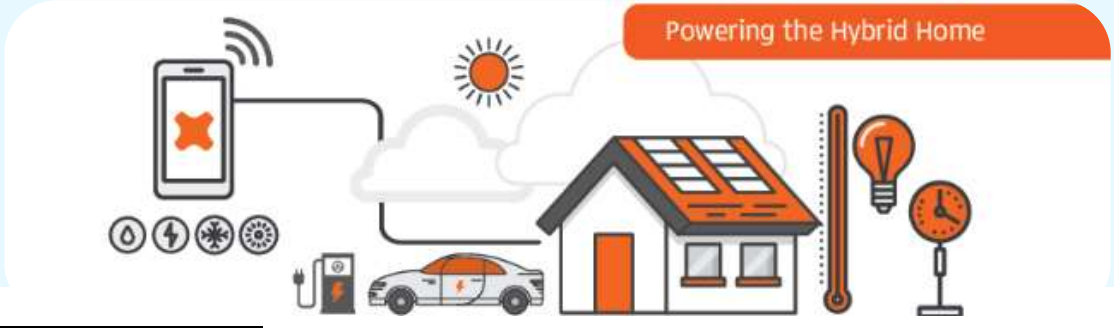
Approach

The Hybrid Home includes a smart meter, energy storage, insulation, electric heating, appliance controls, solar panels (where possible), EV charging (where possible) and an Integrated Energy Management System (iEMS). It works by optimizing the use of demand management. The Hybrid Home is managed to run as much as possible on a mix of off-peak and self-generated electricity. The technology works in the background making the approach particularly suitable for customers who are vulnerable. e.g. who find it hard to engage with technology or who are time poor.

Potential benefits

- ✓ Significant household energy savings
- ✓ Network operators can address peak demand with minimal investment and the government can improve their CO2 reduction measures and deliver a smarter, more flexible energy system at lower cost with greater resilience.
- ✓ The system is automated, requires minimal customer engagement and behaviour change to access and sustain the benefits.
- ✓ It is *less expensive* to build than a home that includes either gas or district heating.

A simple inclusively designed user interface makes the system accessible, but in essence it should run itself, maximizing the benefits to all parties.



[139] http://www.specific.eu.com/news/view/78
[140] Firm Power Parity: A Framework for Understanding the Disruptive Threat of Solar and Storage, Imperial College Business School.

6. Tailored advice and support

Advanced analytics using data from smart meters, sensors, individual appliances and wider datasets in the home can enable much more tailored support and advice to customers with additional needs and on low incomes, and those who support them. For example, smart meter data can be used to identify if customers are under-heating their homes or self-disconnecting. Smart energy usage data plus information about humidity, ventilation or temperature could give a more accurate insight into the energy efficiency of homes and the causes of mould and damp. A number of interviewees saw significant potential for smart meter data to be used in the targeting of fuel poverty support: "Smart meter data combined with other data such as indices of multiple deprivation or age profiles would enable the provision of tailored support programmes."

centre for sustainable energy

CSE - Smart and Snug

Contact: nick.banks@cse.org.uk

IN AF AC W

Smart and Snug uses energy consumption information from a smart electricity monitoring device and data about a home's temperature, and humidity levels to help customers better manage their energy use and stay healthy. Its purpose is to allow energy advisors supporting those in fuel poverty, to see whether a home is providing a comfortable and healthy environment for the people who live in it and to provide more meaningful feedback to customers. Algorithms are under development that will allow 'What if' questions to be asked. E.g What happens if I turn up my heating, how much will it cost me? What if I wait until I have a full load of washing, how much will I save? The system is also designed to send alerts and alarms when homes appear dangerously under or overheated. The information will be designed to be presented in a visually accessible format on a web application which Home Energy Team advisors can then use to give personalized support to householders. When used in conjunction with a home visit, presentation of personalized and accessible data about the home's energy performance means advice is more likely to be acted on.

Oracle Utilities Opower platform

AF G QW

Contact: Julia.Lundin@oracle.com

Smart meter data alone is not always enough to help households reduce their energy bills, especially for more vulnerable customers. The Oracle Utilities Opower platform is used by around 100 utilities worldwide. It uses statistical algorithms to analyse smart metering data alongside wider publicly available datasets. They use this data, plus information provided by customers (where available) and behavioural science techniques, to develop tailored insights and tips to help customers better manage their energy use and lower their bills. These include paper or emailed Home Energy Reports, High Bill Alerts delivered via email, text, or Interactive Voice Response (IVR), and online bill and usage insights. Feedback achieves average energy savings of more than 2% and has been sent to more than 600,000 low income and vulnerable customers.

Advizzo

ID AF G QW W

Contact: Patrice Guillouzic – patrice.guillouzic@advizzo.com

Advizzo uses data science and behavioural insights and actions to help customers consume less and save money. South East Water has used this approach. By sending personalised emails and hard-copy mailings they have achieved water savings of more than 2.2% and a steep increase in digital participation. Advizzo is also developing solutions to help identify vulnerable households as well as developing methods to encourage those households to register themselves so they can access the support available.



7. Blockchain – the potential for more targeted energy support?

While still arguably a concept, in theory if the regulatory environment allows it, blockchain and smart meters could enable any organisation or individual to directly credit a low-income household's energy meter without having to rely on their energy company, or a bank to act as an intermediary.

Bankymoon: **The Usizo Project**

Bankymoon in South Africa have created a smart metering solution where one or more digital wallets is attached to a utility meter – or are made 'Blockchain-Aware'. This makes it possible to using crypto-currency directly top up their water, electricity or gas account. Following a pilot project in Emaweni Primary School in Soweto, near Johannesburg, South Africa, the Usizo Project is looking to raise funds to install meters in other schools. The approach enables anyone, anywhere in the world to "send" electricity, water and gas to anyone of these 'Aware' meters. This revolutionary way to give foreign aid removes the need for donors to make contributions to an organisation which adds costs and distributes the funds opaquely. Donors can now directly fund the causes they believe in. A similar approach however could potentially also be adopted by organisations or individuals looking to support customers in fuel poverty. In the GB context, could such approaches be used by organisations or individuals to target financial energy assistance in a more personalised, direct, cost-efficient and secure way – including for unbanked customers?

bankymoon

IT AF AC W

Contact: Lorien Gamaroff
lorien@bankymoon.com







[141] http://bankymoon.co.za/social-projects/

8. Timely support during power outages and less time off-supply

In today's world, if a customer suffers a power failure the electricity network operator might not know there is a problem until somebody contacts them to let them know. SMETS 2 smart meters have outage notification functionality ('last gasp') where the meter automatically sends a signal to the energy network before it goes off-supply. It can also let the energy company know when power is restored ('First breath'). This data can increase the accuracy of power-cut predictions and help companies to more readily and accurately react to problems.

For vulnerable customers this means:

- Less time off-supply, with power restored more quickly – perhaps even before they realise there was a problem (e.g. if they are asleep or at work).
- Emergency support can be provided more promptly to customers on the PSR until power resumes.
- It should be easier for the company to be able to accurately keep the customer up to date with progress on repairs and when their electricity is back on.



Smart meters should also enable remote diagnostics, with power status information provided to DNOs on request. This means the network company can more readily identify if a power failure is caused by a wider network issue or a problem with the individual customer's premises. In practice, this helps to avoid the inconvenience, and in some cases anxiety of having to have a home visit.

More generally, smart meter data (e.g. showing abnormal grid activity) can help warn of and prevent future outages. In the case of the former, proactive support could in theory be provided to those most in need so they are better prepared before an emergency happens.

9. Healthcare and assisted living

At its simplest, smart meter data can be used to tell how much electricity and gas is being used overall, and what patterns of energy usage the customer had in the past. It may also be possible to infer from the pattern of overall data, which specific appliances are being used, and when. This alongside use of motion, temperature, humidity, ventilation sensors and smart plugs can be used to detect abnormal patterns of activity, which can indicate health or wellbeing concerns. This includes:

- Inactivity (such as through falls)
- Sleep disturbance
- Memory problems
- Changes in activity patterns, e.g. not eating hot food
- Low activity levels
- Unhealthy living conditions e.g. damp, cold homes.

While not without significant privacy and ethical considerations, such information has the potential to be used in a variety of ways to help elderly customers and those with ill health or learning difficulties to live independently for longer. Also, to provide peace of mind to vulnerable customers and their care network.



Annette, from Timpery, UK commenting on EDF's Howz.

"It's nice to have the reassurance that someone is looking out for me."

EDF – Howz

S ID AC W

Contact: Andrewjones@edfenergy.com

EDF's Howz connected homes solution lets families know that customers who are elderly or with additional needs are safe, warm and well, helping them live independently for longer. The system measures household's electricity usage and combines this with information from a series of sensors that detect door movement, temperature and light levels in a person's home to build up a pattern of daily behaviour. The system uses statistical principles and machine learning to identify unusual activity or trends including predictive analytics and knowledge of frailty and functional decline to give early warning of trends that could develop into a serious situation. It alerts the person's care network, whether family, health care professions or social workers, if the user's normal routine is broken and enables them to use information to inform any assistance they give. The householder can select who they share the information with. It's reportedly easy to set up and unobtrusive. The system is predominantly aimed at elderly people, typically living alone, to empower them to let their care network know they are safe, warm and well. It is marketed as a lifestyle rather than a specific assistive living or health product, helping to avoid any stigma associated with vulnerability and increase engagement.

Health monitoring

Smart Energy GB's *Energising Health* report[142] found that a small number of research projects have presented evidence of the ability to use digital energy insights to recognize activities or usage patterns that could be associated with a variety of health conditions. It should be noted however, that while there may be potential, there is not yet any clinical trial evidence of the effectiveness of using digital energy data to improve health outcomes.

[142] Energising health: a review of the health and care applications of smart meter data, Smart Energy GB, 3 May 2017

Health monitoring

S IT W

Overview

Liverpool John Moores University[143] is carrying out early stage feasibility studies to explore if tracking electricity appliance usage data has the potential to be used to support the monitoring of the development or progression of health conditions such as Alzheimer's.

Need

In the UK, the number of people living with self-limiting conditions, such as Dementia, Parkinson's disease and depression is increasing. The resulting strain on national healthcare resources means that providing 24-hour monitoring for patients is a challenge. As this problem escalates, caring for an ageing population will become more demanding over the next decade.

The solution

The University use 1-10 second electricity appliance monitoring data to develop algorithms to distinguish between normal and abnormal patterns of behaviour using an automated process. The data seeks to identify and capture detailed habits and routines through the user's interactions with electrical devices and identify any behaviour that is unusual. e.g. the proposed solution is able to identify when individual appliances are used in the home and model both normal and abnormal behaviour. The current system can identify kettle, toaster, microwave, cooker and washing machine usage. Interaction with these devices and the models generated facilitates the detection of significant activities of daily living (ADLS), and are used to ascertain the overall wellbeing of the occupant. Certain behaviours may indicate problems. E.g. being up during the night, not using or overusing the bathroom, not switching off electric hobs, starting to get up later than usual etc.

Potential benefits

If viable the approach could:

- ✓ Help identify the development and progression of certain conditions.
- ✓ Be used to identify if treatments are having side effects which are causing recognisable changes in behaviour.
- ✓ Identify if living conditions e.g. under-heating of the home are connected to health conditions.
- ✓ The proposed solution requires minimal installation, as it utilises the already installed smart meter infrastructure. It is truly non-intrusive in that it requires no user interaction beyond the normal usage of common household devices and services. The system costs are therefore very low given that the user is not required to wear or use any custom devices for the solution to work.
- ✓ It would be a relatively non-intrusive round the clock monitoring system with relatively little cost to the NHS and social services.
- ✓ Understanding actual behaviours could help inform early and preventative treatment. This is achieved by employing advanced data analytics, known as machine learning, to model patterns in electricity usage and a person's day-to-day routines at home during healthy periods and times when their health and mental state is compromised.

Developed by: Liverpool John Moores University. Working with NHS Mersey Care.

Contact: Carl Chalmers - c.chalmers@ljmu.ac.uk

Potential: There are number of important technical, ethical, privacy and security challenges.

[143] http://www.merseycare.nhs.uk/knowledge-hub/mental-health-articles/smart-meters-study/

Sensor Platform for Healthcare in a Residential Environment (SPHERE)

S AF AC ID W

Developed by: Collaboration between Bristol, Reading and Southampton Universities

Contact: Ben.meller@bristol.ac.uk

Overview

SPHERE is a research project developing a system of sensors installed in people's homes that can detect a range of medical and wellbeing conditions. The sensors work together to identify patterns of behaviour and changes in these patterns that might help diagnose, prevent or intervene in medical conditions.

The Need

The population is getting older in the UK and many other countries around the world. More people are living longer with a range of diseases, many with no cure. 70% of the health and social care budget is spent on long-term health conditions that cannot be cured and last for decades. SPHERE is exploring ways to use technology to overcome these issues.

Potential Benefits/Impact

- ✓ Detecting signs of instability before a fall.
- ✓ Changes in posture and social contact due to depression.
- ✓ Allowing patients to be discharged home safely after surgery.
- ✓ Curing dementia by administering treatments at the earliest stages.
- ✓ A much better understanding of health in the home

10. Automation!

The challenges of delivering customer engagement and behaviour change, particularly for more vulnerable groups, are well documented. The smarter future promises an increase in automation that could minimise the need for customers to engage with or even think about their energy. This includes: optimising appliance use and heating to benefit from off-peak tariffs (see p.156 geo's hybrid home); home heat management to reduce bills and maintain comfort and warmth; and automated switching of energy tariff by third parties such as Switchcraft and Flipper or intelligent assistant Myia. There may be high user acceptance of automation among some customer groups. E.g. UCL's *Is it time? Consumer attitudes to time of use tariffs* March 2015 report found that the most popular tariff was the one involving direct load control (allowing electricity suppliers to cycle people's heating systems off and on in return for a lower flat rate).[144] A key challenge with many of these approaches is the usability and accessibility of products and services for those on low incomes and with additional needs. In addition, the regulatory regime is also arguably not ready for automation. It may be unclear who is responsible when things go wrong, so complaint and redress pathways will need clarifying.

Flipper

AC AF W

Contact: Natalie@flippercommunity.com

Flipper aims to ensure that customers don't over-pay for energy by helping them switch onto the best value energy tariff available to them. The customer signs up to Flipper's independent service online at no upfront cost. The service automatically compares all tariffs available in the market from suppliers which pass their customer service vetting process, and selects the best value deal for the customer given their location, meter type, payment preferences e.g. prepayment and energy use. Then every month the service automatically scans the market to see if there is a better deal available – taking into account any exit charges to switch. The service doesn't currently take into account if the customer is on the Warm Home Discount, but they can give the customer an option to 'switch only to a Big 8 supplier' who do support the Warm Home Discount if the customer so wishes. If Flipper finds a deal that could save the customer money, they'll automatically switch – or 'flip' – the customer to the new supplier. They notify the customer of any new switch with a 14-day cooling-off period if for any reason they'd like to stick with the previous supplier. On average, Flipper customers save £385 per year on their energy bills the first time they switch. Flipper does not charge commission to companies for the customers they gain so is independent. There is an annual fee of £25 but the customer only pays this if they make a saving of over £50 in that year.

[144] It was rated as being comparatively easy to use and likely to save people money, which may have contributed to its popularity. The direct load control was limited in terms of its effect on heating temperatures and offered unlimited overrides – a more intrusive control arrangement may not be as popular. The least popular was a dynamic time of use tariff, with different rates for electricity at different times and varying each day. It was seen as difficult to use and intrusive. Michael J Fell, Moira Nicolson, Gesche M Huebner and David Shipworth, *Is it time? Consumer attitudes to time of use tariffs*, UCL Energy Institute and Smart Energy GB, 10 March 2015

Smart meters should further improve the quality of service provided by automated switching services: with standard meters the customer still needs to read their energy meter to get accurate consumption information on which to base automated switching decisions; customer action is also required for the supplier to calculate an accurate final bill or refund (when the customer is in credit) on change of supplier and the switching process can also take weeks. However, with smart meters and Ofgem's moves to faster switching, auto-switching services could, with the customer's permission, potentially access their energy consumption information directly from the smart meter, improving the quality of data that informs the calculation on the best value energy tariff and removing the need for customer action to calculate accurate exit bills, and refunds.

VCharge/Ovo Energy's Dynamo

AC AF W

Contact: johan.dupleissis@ovoenergy.com

Potential: 1.5 million households with electric storage heaters
Where used: Originally piloted in one tower block owned by Your Homes Newcastle (YHN), now also expanded to Glasgow and the private home owner market across the country.

Solution

VCharge has a retrofit technology for electric storage heaters which provides better temperature control and cheap charging during periods of low daytime electricity demand. A dynamo control unit is added to the electric storage heaters. This enables the temperature of individual storage heaters to be monitored and then to determine how much charge each heater requires, based on previous use patterns and external temperature data. This automated system with cloud-based control aims to maintain a level of comfort set by the resident and will avoid overcharging the heater, and purchase electricity for charging at the optimum times during the day, while providing frequency and balancing which services the grid. Residents are able to change the comfort level using a phone app or website.

Need

Many electric heating residents with night storage heaters find they deliver too much heat in the morning and by early evening the storage heater is depleted, leaving the property cold when heat is most needed. Increasing levels of renewable generation on the electricity grid have led to periods of low wholesale electricity prices during the day and these are used to provide cheap charging for the storage heaters in this project.

Potential benefits

- ✓ A higher proportion of social housing residents use electric storage heaters. This technology should improve levels of thermal comfort, reducing overheating in the morning and a lack of heating in the early evening.
- ✓ Based on the manufacturer's experience, electricity consumption may be reduced by 10 to 15%, with a bill reduction of up to 25% depending on the amount of additional comfort requested by the customer.
- ✓ The variable output from renewable generators has been a challenge for the electricity grid and this technology could play a role in assisting grid balancing.

Switchee:
Smart Thermostat

The need

Effective use of domestic heating controls can minimise energy use, saving money and CO_2, and smart thermostats make it easier for households to optimise their heating. However, they are often not suitable for social housing, as they usually require wifi to work effectively, and not all tenants have this.

Approach

Switchee has developed a smart thermostat which works without wifi or mobile phone apps, and automatically adjusts a household's heating with minimal interaction from residents. Energy savings are made possible by the Switchee's proprietary algorithm that works to predict a household's weekly routine, automatically turning the heating off when the tenants are not in the property. Data on occupancy patterns is collected passively, creating a bespoke heating profile for each household, without any active input from residents. Energy use can be cut by up to 15%, and data fed back to housing associations and local authorities to help them monitor the state of their housing stock and deliver better outcomes for their tenants.

Potential benefits

- ✓ £150 p.a. savings for social housing residents and a tangible reduction in fuel poverty.
- ✓ Potential energy savings of 1.14Mwh per Switchee per annum & CO2 reductions of 210kg per Switchee per annum.
- ✓ Positive behavioural change to resident energy consumption via energy saving advice made possible through Switchee's messaging function.
- ✓ Switchee enables better management of estates, which in turn offers better living and lifestyle conditions for tenants. Remote data insights can highlight maintenance issues. E.g. be used to pre-empt maintenance issues such as mould, poor insulation, overheating and faulty boilers and prevent them before the cost of remedying escalates.

Contact: Charles Solanki - charles.solanki@switchee.co

Potential: 5m UK social homes**.** Originally piloted in 12 housing associations and 4 local authorities across the UK, including Peabody, Flagship, Optivo and The Royal Borough of Greenwich. Now being rolled out nationwide.

Ten steps to 'smart for all'

The following outlines at a high-level ten key steps highlighted by our interviewees to ensure the benefits of new technologies are delivered for all consumers. This is not an exhaustive list. It should be noted that work is underway in many of these areas and we look forward to seeing further progress. These are in no particular order.

> *For customers with certain disabilities – if they have the money, technology will facilitate a more comfortable life and better service – the difficulty is who gets left behind? Technology is definitely an opportunity, but the opportunity is not consistent and not for all.*
>
> **Industry rep**.

1 Ensure high-quality service for customers with additional needs

Protections under Smart Metering Installation Code of Practice (SMICOP)[145] and Smart Energy GB's objectives[146] are designed to ensure that customers in vulnerable situations get any extra time, support and tailored information that they may require pre, during and post the smart meter installation to access the benefits of smart metering.

However, some interviewees felt that as tens of thousands of meters were going to be installed every day in order to meet the end 2020 smart meter installation deadline, that there was a real risk that installers may be given demanding daily installation targets. This in turn could result in vulnerable customers being rushed or not getting the time and extra help they need. Indeed, Citizens Advice's *Smart Support* report found that customers with additional needs are unlikely to be offered one-to-one support before or after the smart meter installation.[147]

We welcome, therefore, the government's commitment to work with energy companies, consumer groups and Ofgem to develop a set of principles for the provision of support to vulnerable and prepayment customers. Also, approaches such as the partnership between CSE and British Gas, to explore how support can best meet the needs of elderly low-income customers and those with arthritis.[148] Given the pace of rollout, these kinds of initiatives need to progress quickly and deliver measurable benefits for customers with additional needs.

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[145] The Smart Metering Installation Code of Practice (SMICOP) has a number of specific requirements designed to protect and ensure customers with additional needs can access the benefits of smart metering. Suppliers must, for example, ensure energy efficiency guidance takes into consideration customers' additional needs. Smart Metering Installation Code of Practice, 29 September 2017.

[146] Smart Energy GB has a specific obligation to assist consumers on low incomes, or prepayment meters, or consumers who may encounter additional barriers in being able to realise the benefits of smart metering systems due to their circumstances. Consumer Engagement Plan and Budget 2017, Smart Energy GB, 19 December 2016.

[147] Smart Support: support for vulnerable consumers in the smart meter roll-out, Citizens Advice, March 2017.

[148] CSE are working in partnership with British Gas to research how vulnerable customers can best be supported to understand and make use of the data they receive through their smart meter, including how to change their behaviour in response to this data. This is looking particularly at how advice on using the IHD, energy efficiency advice and follow-up support can be tailored to meet the needs of elderly low-income customers and people with arthritis. The research is funded by Joseph Rowntree Foundation (https://www.cse.org.uk/projects/view/1319).

2 Maintain up-to-date cross-sector privacy safeguards

Energy customers with smart meters have specific privacy protections under the smart metering Data Access and Privacy Framework in addition to wider privacy safeguards.[149] The framework is due to be reviewed in 2018.

Despite reportedly very low levels of customer concerns about the privacy risks of smart meters,[150] a large number of respondents highlighted the continued importance of ensuring that robust safeguards are in place and complied with, especially following any move to half-hourly settlement. This is viewed as key to ensuring customer confidence and engagement in new technology and data-based services.

On the whole the current regulatory framework is seen as out of step with the protection needs of vulnerable customers in a smarter world. There were also concerns raised that the monitoring and enforcement of privacy rules is insufficiently resourced both within Ofgem and the Information Commissioner's Office (ICO). An increasingly cross-sector approach to monitoring company responses to the GDPR regulations and their impact on consumers and industry behaviour will be needed.

In addition, appropriate regulation is needed to ensure that increased customer profiling which enables greater cost reflectivity does not lead to inequitable outcomes. For example, some of the poorest, most vulnerable, and most remote customers (who may be higher risk and higher cost to serve) could be offered less choice of products and services and more unfavourable terms. Government and regulators need to give a clear signal to companies on the acceptability of variable pricing structures and tailored deals particularly given the essential nature of energy.

In an increasingly data-rich world, companies will also need to work harder to manage data risks and think carefully about the fairness implications of their data-based commercial decisions.

3 Improve data access and understanding

Alongside ensuring appropriate personal data privacy and security for energy customers, improving access and understanding of data is also seen as necessary to unlock further vulnerability innovation. This includes anonymised data held by energy companies, customers themselves (including in their energy meters), government agencies and customer insight data held by charities, e.g. the London Datastore was flagged as a good example of a free and open data-sharing portal.[151]

[149] Smart meter data access and privacy, DECC, 5 April 2012.
[150] Smart Energy GB reports that only 4% of GB respondents mentions privacy as a concern about smart meters. Smart Energy Outlook Report, Smart Energy GB , August 2017.
[151] https://data.london.gov.uk/

Data, including personal smart energy data, also needs to be easy for customers or third parties with a customer's consent to access, use and share, in a secure and timely way.[152] Access to data is particularly important, since, as mentioned, the value of social innovation and solutions to problems such as fuel poverty and energy debt are often drawn from across multiple sectors and types of organisation. Also, there are relatively weak incentives on energy suppliers to innovate to support some vulnerable customer segments. Supply chain innovators and third parties such as Flipper, OPower, and MyWave, for example, are arguably currently limited in how innovative they can be as they are to varying extents dependent on access to data that is principally held by energy suppliers.

Government, Ofgem, energy companies and consumer/disability groups should work with organisations such as Digital Catapult and the Open Data Institute to explore how they can open up anonymised datasets in a timely, secure privacy-friendly way to enable all parties, including non-energy parties, to innovate and collaborate around vulnerability issues. The UKRN may want to consider how it can facilitate this as part of phase two of its data project.

4 Prioritise inclusive design

Under government rules the smart meter IHD offered to customers must be easy for them to use. Indeed, Energy UK members have worked with geo and RNIB to create an accessible energy display (see p.149).[153] The usability of smart products and service more widely will be an important factor in minimising the digital divide and ensuring the benefits of innovation are delivered for all.

Poorly designed products and services are seen to be exacerbating barriers to access. For example, one disability rep noted that many websites are still unusable for many older and disabled people, despite easy ways to make them more inclusive. One industry interviewee stated 'IoT projects are failing for the same reason IT projects fail. Too much focus on the technology and not enough on the people [that use them]'.

Smart Energy GB's research also flags that an inclusively designed high-quality installation service could meet the additional needs of many customers – without singling them out as different. Though flexibility to further tailor service for some vulnerabilities is still required.[154]

Companies should ensure that, wherever possible, their products and services are inclusively designed and are tested on customers with additional needs early in development. Government should consider customer accessibility or inclusivity standards for smart appliances.

[152] At CSE's Smarter Warmer Homes event on 11 October 2017 two innovating organisations separately raised issues about barriers to accessing smart meter energy data – one highlighted the cost and complexity in accessing data via the Data Communications Company, the other, the practical difficulties (two technical experts had) with pairing consumer access devices to the home area network for a pilot they were running to support vulnerable customers.
[153] Government requires that the In-Home Display is designed to enable the information displayed on it to be easily accessed and presented in a form that is clear and easy to understand *including* by consumers with impaired: sight, memory and learning ability, perception and attention and/or dexterity. The Smart Metering Equipment Technical Standards (SMETS), Chapter 6, paragraph 6.3, p.96.
[154] Smart Energy GB publishes research into the optimization of the smart meter installation experience for audiences with additional barriers, Smart Energy GB, 24 March 2017.



Left: The Research Institute for Consumer Affairs (Rica)'s Research Exchange in action. This is a place to share ideas and best practice in inclusive consumer research. The charity also has RicaWatch – a 750 person-strong consumer panel made up of older and disabled customers which can be used for product testing, co-design of services, mystery shopping and feedback on approaches. British Gas has been working with Rica

5 Ensure interoperability

New smart products and services must be compatible and interoperable so that customers are not locked into one provider and/or don't have to pay extra for appliances to work together. This is particularly significant for any customers with additional needs who rely on smart systems and may find it harder to navigate problems caused by incompatible technology. Where problems occur with vulnerability services customers should not have to pay for technology to be replaced or upgraded.

6 Monitor smarter tariffs and complaint handling and redress

There are expected to be significant changes to tariff offerings and structures and a range of deals that combine products, service and energy supply. Most recognise that there will be 'winners and losers' from any new time of use contracts where energy is priced differently at peak and off-peak times. For example, many vulnerable consumers at home during the day could benefit from pricing structures that reward flatter more constant consumption patterns and therefore access what are expected to be among the cheaper deals. However, others may not be able to benefit from these new tariffs if they are unable to shift their usage. Sustainability First, Citizens Advice and Ofgem have all carried out work in this area.[155]

[155] Sustainability First – http://www.sustainabilityfirst.org.uk/index.php/energy-demand-side .Ofgem, Distributional Impacts of Time of Use Tariffs, 24 July 2017 and Citizens Advice, The Value of Time of Use Tariffs in Great Britain, 10 July 2017.

New tariff offerings such as tracker tariffs with prices linked to wholesale costs; new advance payment options for non-prepayment meter customers;[156] and bundled deals that combine supply with products and services, and potentially cross-utility offerings; may also require higher levels of understanding and engagement from customers to reap the benefits. The likely increase in different types of tariffs is expected to make it harder to compare deals, risks 'choice overload' resulting in inertia, particularly for those without internet access.

It may also be harder for customers to identify who is responsible and get appropriate redress when things go wrong e.g. if a customer with automated heating controls receives a high energy bill, how do they identify and prove whether it is the supplier, product manufacturer's or in some instances the broadband providers responsibility?

Government and Ofgem have committed to continue to consider the potential social impacts of smart tariffs. In addition, a number of interviewees felt it was also important to facilitate free third-party switching services and ensure robust safeguards are in place so that customers are aware of the affordability implications of new tariffs and that they may not be suitable for everyone. In addition, government should closely monitor customer complaints about innovations and take early action if problems are identified.

7 Uphold the principle of universal service

Government has committed to ensure *every household* in GB is offered a smart meter and in-home display by the end of 2020. It is important that this is delivered in practice despite the higher cost to suppliers of installing in some homes. As wider smart services develop it is essential that no household is left behind in terms of the reliability and access to products and services because of where they live, e.g. customers in rural areas, without high-speed internet connections, or those in certain building types such as high-rise flats may require bespoke technologies or services and be higher cost to serve. This could deter companies from serving them.

8 Monitor and enable smart prepay innovation

As noted, some interviewees felt that the prepay cap will delay smart prepay innovation. In particular, that PPM customers on new capped tariffs may be dis-incentivised from switching to new pay as you go offers while it is in place, thus stifling demand and discouraging companies from investing in this area. Two energy suppliers indicated that they had shifted their investment away from smart prepay into other areas as a result.

On a separate issue, there is also no easy way for prepay customers to drive innovative services as no price comparison sites currently enable customers to compare the detail of service offerings, e.g. you can't compare non-disconnection periods or top-up options.

[156] For example, Scottish Power's Power Up tariff - https://www.scottishpower.co.uk/powerup

Concerns were also raised that smart prepay could result in a decline in service for some in some situations and that monitoring quality of service should be considered, e.g. while Ofgem introduced safeguards to ensure suppliers continue to offer cash as a top-up option, it is important to ensure that the number of payment outlets open to customers who pay by cash does not decrease as this could increase inconvenience for some. Also while remote top-up failures are expected to be rare, it is important to monitor the frequency and customer experience when this occurs.

9 Ensure products and services are affordable

The smart meter and in-home display are provided at no additional cost, but those on low incomes may need additional support to afford wider smart appliances or services that could improve their lives. While there may be mechanisms in place for customers to avoid large upfront purchasing costs, e.g. 'rent a roof' solar schemes, or longer-term contracts where the customer pays back the cost of an appliance over time, these have historically not always been good value and tend to lock in the customer. Given this and the wider potential barriers to access, government and Ofgem should also consider how they might wish to monitor the distributional impacts of smart energy innovation for energy customers with additional needs so as to identify where intervention may be needed.

10 Improve cross-government/utility coordination and integration

A number of interviewees pointed out that in order for the assistive living services market to work efficiently there needs to be a more coordinated approach between housing, energy, health and social services sectors to maximise the value for energy customers with additional needs and deliver wider societal benefits.

Recommendations - Ensuring a smarter future works for all consumers

Recommendation 14

Ensuring usability or user's ability to use smart products and service is an important factor in minimising the digital divide and ensuring the benefits of innovation are delivered for all.

a. Companies should ensure that, wherever possible their products and services are inclusively designed and are tested on customers with additional needs early in development.
b. In its Industrial Strategy government outlined its intention to consult on seeking powers to set standards for smart appliances in relation to interoperability, data privacy, cyber and grid security. They should also consider a customer accessibility or inclusivity standard as part of this process.

Recommendation 15

As part of the Smart Systems and Flexibility Plan, government and Ofgem have committed to continue to consider the potential social impacts of smart tariffs. They should also consider how they might wish to monitor the wider distributional impacts of smart energy innovation on energy customers with additional needs.

Recommendation 16

Energy companies should develop and publish comprehensive indicators to demonstrate how they are using smart meters and new technologies to deliver improved service and quality of life to customers with additional needs. These could be:

- Outcomes-based e.g. satisfaction levels, complaints received, energy reduction broken down by key vulnerability demographics, *and/or*
- Outputs-orientated e.g. the number of customers with additional needs: provided with an accessible in-home display; who have received extra help during the smart meter installation; were provided with alternative equipment to replace condemned equipment.

This will help companies to demonstrate fair treatment of vulnerable customers as smart meters become the norm, and will support Ofgem and government in ensuring access to the benefits of smart innovations for all consumers.

Recommendation 17

In preparing for General Data Protection Regulation (GDPR) companies should also explore how they can improve service delivery to customers in vulnerable situations through making better use of data.

Recommendation 18

Government, Ofgem, energy companies and consumer/disability groups should work with organisations such as Digital Catapult and the Open Data Institute to explore how they can open up anonymised datasets in a timely, secure privacy-friendly way to enable all parties including non-energy parties to innovate and collaborate around vulnerability issues. The UKRN may want to consider how it can facilitate this as part of phase two of its data project.

Conclusion

Our research and case studies show that there are significant improvements including 'easy wins' that many energy companies could and should make to the way they identify, support and empower customers in vulnerable situations. Our findings also identify that there is much that can and should be done to *enable* 'innovation for all' – by companies, government, regulators, product and service innovators, charities and consumers themselves. The smarter world offers many opportunities to improve service and quality of life for customers with additional needs, but benefits are not guaranteed and the distributional impacts of developments will need careful monitoring. It is our intention that the 18 recommendations outlined in this report, taken together with our Vulnerability Innovation Flight Path and the four practical guides, will form the basis of a new framework able to catalyse effective innovation for *all* energy consumers.



Appendix 1 – Case study key and index

Case studies by company name

Advizzo	158
Austrian SignTime: SiMAX avatar technology	63
Bankymoon: The Usizo Project	159
Barclays: Community Wings	138
Barclays: Social Services Link	64
BG/CLIC Sargent Partnership: supporting families with children with cancer	96
Bristol Energy: The Energy Hub	59
British Gas: Dementia Friendly Organisation	133
British Gas: Structures to support vulnerability	136
BSI :Inclusive Services Standard	135
BT: 24 hour free fault repair	81
BT: Natural Language IVR	48
BT: Power of Attorney	81
BT: Protective Services Scheme	81
Citizens Advice: PSR sign-up tool	48
CLP Power: 'Save Energy Light Up Lives'	95
CLP Power: E-Autopay Reminder	97
CSE: Online Videos	65
CSE: Smart and Snug	157
E.ON: Care and Assessment Tool	41
E.ON Germany: Payment Help Program	98
EDF France- social worker exchange	48
EDF: Howz	161
FCA: Letter Writing Group	65
Flipper	164
geo: Hybrid Home	156
geo: Trio II accessible display	149
Go Cardless: Flexible Billing	97
GP Paul Hodgkin: Care Opinion	134
Homeglow Products: B-Warm	75
iViTi ON Safety Light Bulb	83
Liverpool John Moores University /NHS Mersey Care: Health Monitoring	162
Louder than Words: Charter Mark	137
Microsoft: Skype Translator	152
Next generation text service	66
NGN: Have you found the killer yet? Smart phone apps/games	82
NGN: Learning to Live Independently	99
NGN: Community Promises Fund	139
npower: Emergency packs	72
npower: Fuel Bank	92
Oracle Utilities: Opower platform	158
PWC: Debt Analytics Methodology	49

Robin Hood Energy: Personal Responsibility 65
RoboBraille/Sensus Access 61
Sensor Platform for Healthcare in a Residential Environment (SPHERE) 163
SGN: Gas Locking Cooker Valve 74
SGN: Neighbourhood Alert 79
Smart Compliance: Carbon monoxide, smoke and gas detection monitoring system 77
Smart Energy GB: Easy Read 66
Southern Water: Data sharing with social housing providers 49
Southern Water: Universal Metering 45
SPEN: Jab and Jabber 50
SSE: Signvideo 57
SSE: Smart and Electric Heating Community Liaison 67
SSEN: Energy Efficiency Gap Funding 90
SSEN: Interactive Vulnerability Mapping Web App 47
Switchee: Smart Thermostat 166
Toyah Wordsworth: 'Removing Barriers' board game 140
Uber: Peace of mind for home visits 82
UK Power Networks: BrowseAloud 54
UK Power Networks: Faith and Power 67
United Utilities: Talking Bills 54
User 1st: Website Accessibility 68
Utilita: Smart Prepay Self-disconnection Support 154
VCharge/Ovo Energy: Dynamo 165
Wales and West Utilities/Western Power Distribution: PSR app 51
Western Power Distribution: Power Cut App 84
Western Power Distribution: Power Outage Devices 84
Western Power Distribution: PSR Data Cleanse 43
Western Power Distribution: Two-way Texting 56
Western Power Distribution: Wellington Healthy Homes 50
Western Power Distribution: Who's On Our Wires Horizon Scan 39
WWU: Plain English 68
Yorkshire Water: Financial Mapping 50

Case studies by categorisation

Identifying vulnerability

Advizzo 158
BG/CLIC Sargent Partnership: supporting families with children with cancer 96
BT: Natural Language IVR 48
Citizens Advice: PSR sign-up tool 48
E.ON: Care and Assessment Tool 41
E.ON Germany: Payment Help Program 98
EDF France- social worker exchange 48
EDF: Howz 161
npower: Fuel Bank 92
PWC: Debt Analytics Methodology 49

Sensor Platform for Healthcare in a Residential Environment (SPHERE) 163
Southern Water: Data sharing with social housing providers 49
Southern Water: Universal Metering 45
SPEN: Jab and Jabber 50
SSEN: Interactive Vulnerability Mapping Web App 47
Utilita: Smart Prepay Self-disconnection Support 154
Wales and West Utilities/Western Power Distribution: PSR app 51
Western Power Distribution: PSR Data Cleanse 43
Western Power Distribution: Wellington Healthy Homes 50
Western Power Distribution: Who's On Our Wires Horizon Scan 39
Yorkshire Water: Financial Mapping 50

Improving access

Austrian SignTime: SiMAX avatar technology 63
Bankymoon: The Usizo Project 159
BG/CLIC Sargent Partnership: supporting families with children with cancer 96
Bristol Energy: The Energy Hub 59
BT: Natural Language IVR 48
CSE: Online Videos 65
CSE: Smart and Snug 157
E.ON: Care and Assessment Tool 41
EDF: Howz 161
FCA: Letter Writing Group 65
Flipper 164
geo: Trio II accessible display 149
Microsoft: Skype Translator 152
Next generation text service 66
npower: Fuel Bank 92
Robin Hood Energy: Personal Responsibility 65
RoboBraille/Sensus Access 61
Sensor Platform for Healthcare in a Residential Environment (SPHERE) 163
SGN: Gas Locking Cooker Valve 74
SGN: Neighbourhood Alert 79
Smart Energy GB: Easy Read 66
Southern Water: Universal Metering 45
SSE: Signvideo 57
SSE: Smart and Electric Heating Community Liaison 67
SSEN: Energy Efficiency Gap Funding 90
UK Power Networks: BrowseAloud 54
UK Power Networks: Faith and Power 67
United Utilities: Talking Bills 54
User 1st: Website Accessibility 68
Utilita: Smart Prepay Self-disconnection Support 154
VCharge/Ovo Energy: Dynamo 165
Western Power Distribution: PSR Data Cleanse 43
Western Power Distribution: Two-way Texting 56

Western Power Distribution: Wellington Healthy Homes 50
Western Power Distribution: Who's On Our Wires Horizon Scan 39
WWU: Plain English 68

Safety and peace of mind

BT: 24 hour free fault repair 81
BT: Power of Attorney 81
BT: Protective Services Scheme 81
E.ON: Care and Assessment Tool 41
Homeglow Products: B-Warm 75
iViTi ON Safety Light Bulb 83
Liverpool John Moores University /NHS Mersey Care: Health Monitoring 162
NGN: Have you found the killer yet? Smart phone apps/games 82
npower: Fuel Bank 92
Sensor Platform for Healthcare in a Residential Environment (SPHERE) 163
SGN: Gas Locking Cooker Valve 74
SGN: Neighbourhood Alert 79
Smart Compliance: Carbon monoxide, smoke and gas detection monitoring system 77
SSEN: Interactive Vulnerability Mapping Web App 47
Uber: Peace of mind for home visits 82
UK Power Networks: Faith and Power 67
Utilita: Smart Prepay Self-disconnection Support 154
Western Power Distribution: Power Cut App 84
Western Power Distribution: Power Outage Devices 84
Western Power Distribution: PSR Data Cleanse 43
Western Power Distribution: Two-way Texting 56
Western Power Distribution: Wellington Healthy Homes 50

Affordability

Advizzo 158
Bankymoon: The Usizo Project 159
BG/CLIC Sargent Partnership: supporting families with children with cancer 96
BT: Protective Services Scheme 81
CLP Power: 'Save Energy Light Up Lives' 95
CLP Power: E-Autopay Reminder 97
CSE: Smart and Snug 157
E.ON: Care and Assessment Tool 41
E.ON Germany: Payment Help Program 98
EDF France- social worker exchange 48
Flipper 164
geo: Hybrid Home 156
Go Cardless: Flexible Billing 97
Homeglow Products: B-Warm 75
NGN: Learning to Live Independently 99
npower: Fuel Bank 92
Oracle Utilities: Opower platform 158

PWC: Debt Analytics Methodology 49
Robin Hood Energy: Personal Responsibility 65
Sensor Platform for Healthcare in a Residential Environment (SPHERE) 163
Southern Water: Data sharing with social housing providers 49
Southern Water: Universal Metering 45
SSEN: Energy Efficiency Gap Funding 90
UK Power Networks: Faith and Power 67
Utilita: Smart Prepay Self-disconnection Support 154
VCharge/Ovo Energy: Dynamo 165
Western Power Distribution: PSR Data Cleanse 43
Western Power Distribution: Wellington Healthy Homes 50
Western Power Distribution: Who's On Our Wires Horizon Scan 39
Yorkshire Water: Financial Mapping 50

Smarter World

Advizzo 158
Bankymoon: The Usizo Project 159
CSE: Smart and Snug 157
EDF: Howz 161
Flipper 164
geo: Hybrid Home 156
geo: Trio II accessible display 149
Liverpool John Moores University /NHS Mersey Care: Health Monitoring 162
Microsoft: Skype Translator 152
Oracle Utilities: Opower platform 158
Sensor Platform for Healthcare in a Residential Environment (SPHERE) 163
Switchee: Smart Thermostat 166
Utilita: Smart Prepay Self-disconnection Support 154
VCharge/Ovo Energy: Dynamo 165

Appendix 2 – Project Inspire online survey questions:

Title: Vulnerable energy consumers – call for evidence and views.
The survey was sent in January 2017.

1. In general, how good do you think energy suppliers are in supporting customers with additional needs e.g. those on low incomes, with disabilities, in rural areas?

Very good

- ○ Good
- ○ Satisfactory
- ○ Poor
- ○ Terrible
- ○ Don't know

2. In general, how good do you think energy network companies are in supporting customers with additional needs e.g. those on low incomes, with disabilities, in rural areas? (network companies are those companies responsible for the pipes and wires that supply gas and electricity to your home)

- ○ Very good
- ○ Good
- ○ Satisfactory
- ○ Poor
- ○ Terrible
- ○ Don't know

3. Do you think there are any energy companies that are particularly good at supporting customers with additional needs or who are vulnerable? If yes which company/ies, and why?

No

Yes

If yes, please specify

4.It is important that energy companies do all that they can to support customers with additional needs or who may be vulnerable. Do you know of any good or innovative practice (whether a service or a product) offered by an energy company that should be rolled out more widely? If yes, please specify/include a link.

No

Yes

If yes, please specify

5. Do you know of any particularly useful services or products offered to customers with additional needs by companies in non-energy sectors e.g. telecoms providers, banks, shops, water companies etc. that you think energy companies should also offer to customers in vulnerable situations?

No

Yes

If yes, please specify

6. Does your organisation have or know about any potentially innovative practice of how you or a partner organisation have supported customers in vulnerable circumstances that might offer lessons learned for energy companies? e.g. identified customers with additional needs, ensured access to services, or supported those on low incomes?

No

Yes

If yes, please specify

7. Identifying energy customers who need additional support and tailored services can be challenging. Do you know of any particularly effective ways of identifying and targeting help or a tailored service at customers with additional needs?

No

Yes

If yes, please specify

8. In your view, will technological innovation e.g. smart metering, product development, and digital evolution, make things better or worse for energy customers in vulnerable circumstances and with additional needs?

Better
Same
Worse

Please briefly explain your answer above

9. The energy regulator Ofgem expects the way in which energy companies support vulnerable customers to improve in line with technological opportunities and wider innovation. In general how innovative do you think energy companies are in supporting customers in vulnerable situations? e.g. those on low incomes, in rural areas, with disabilities?

Very innovative
Quite innovative

Not innovative

Not at all innovative
Any further views on this?

10. Has your organisation ever worked with an energy company to help improve the way they support and serve customers in vulnerable situations?

Yes

No, not as far as I'm aware

11. Would you be interested in working with an energy company or product manufacturer in the future to help improve the services they offer to energy customers who have additional needs/are vulnerable?

Yes

No

12. In your view how could energy companies improve their service to customers with additional needs/in vulnerable situations? e.g. those on low incomes, in rural areas, without internet, with disabilities or mental health problems etc.

[Open question]

13.Do you offer any kind of service or information that energy companies could use to help them better identify, understand, support and serve energy customers in vulnerable situations? Please briefly specify/include a relevant web link.

No

Yes
If yes, please specify

14.How does your organisation currently keep up to date with new energy related products and services which could particularly benefit customers with additional needs or who are vulnerable?

[Open question]

15. Would you like a copy of the research?

Yes

No

16. Would you be willing to promote any relevant findings of the research in your newsletter/other communications?

Yes/Maybe

No

Finish – Thank You!

Appendix 3 – Interviewees

Between November 2016 and August 2017 we conducted a total of 52 semi-structured interviews (each lasting between 45 minutes and three hours) with around 70 people. In addition we had a number of phone discussions on aspects of the report to sense-check emerging assumptions. The interviewees are outlined below. Our sincere thanks to all those that participated in the research.

Energy companies and their industry bodies	
British Gas	Steve Crabb
Bristol Energy	Kester Bypass
EDF Energy	Andy Jones, Paula Dinnage
Energy UK (2 interviews)	Audrey Gallacher, Natan Doron
E.ON Energy	Vanessa Northam, Tina Pearce, Nimesh Mistry, Martha Solomon, Brian Tilley
Northern Gas Networks	Tom Bell
nPower	Matthew Cole, Siobhan O'Loughlin
Scottish Power	Rhona Peat, Eileen Anderson, Mark Fawcitt
SGN	Margaret Hunter, Danny Symes, Richard King
SSE	Helen Sanders
SSEN	Simon O'Loughlin, Jennifer McGregor
UKPD	Guilia Privitera
Utilita	Bill Bullen
Western Power Distribution	Alison Sleightholm, Alex Wilkes
Service/product manufacturers and their industry associations	
Advizzo	Julien Lancha, Patrice Guillouzic
BEAMA	Yselkla Farmer
geo	Simon Anderson, Simon Hughes, Patrick Caiger Smith
HCL Technologies	Prashant Sharma
Homeglow Products	Martin Lewis
MYLE	Gabrielle Mitchell
Toshiba (2 interviews)	Richard Wiles, James Hunt, Gareth Williams
Consumer and disability voices	
Action on Hearing Loss	Laura Arrowsmith
Age UK	Mervyn Kohler, Phil Mawhinney

Citizens Advice (2 interviews)	Gillian Cooper, Jake Beavan, Hugh Stickland, Simon Moore, Morgan Wild
The Extra Help Unit	Monica Davidson
Joseph Rowntree Foundation	Katharine Knox
Research Institute for Consumer Affairs (RICA)	Caroline Jacobs
RNIB	John Worsfeld
Mencap	Alexia Karageorghis
Money Advice Service	Jake Elliot
Money Advice Trust/Person Finance Research Centre – Bristol University	Chris Fitch
National Right to Fuel Campaign	Hugh Goulbourne
National Energy Action	Peter Smith
Scope	Minesh Patel
Other (academics/consultants/regulators/government)	
Accenture	Richard Hanks
BEIS (2 interviews)	Michael Harrison, Victoria Mason, Peter Warren
Centre for Consumers in Essential Services – University of Leicester	Cosmo Graham
Creative Sensemaking	Dave McCormick
Energy Systems Catapult	Rose Chard
FCA	Martin Coppack
NHS Hammersmith and Fulham Commissioning Group	Matthew Mead
Liverpool John Moores University	Carl Chalmers
Ofgem (3 interviews)	Philip Cullum Meghna Tewari, Rupika Madhura
New Power	Janet Wood
Smart Change Consulting	Jo Gilbert
Smart Energy GB	Rob Smith, Ben Miller

Appendix 4 – Semi-structured interview questions

Introduction - framing

- Thank the interviewees for participating in the research.
- Give a brief introduction to Sustainability First, ourselves, and the aims of the Project.
- Remind people that their responses are not attributed to either their company or the individual. This is too encourage open and frank discussion.
- Remind interviewees of the Ofgem vulnerability definition we are using.
- Highlight that the questions are designed for a variety of different organisations – we will therefore focus on those areas of most relevance to them/their experience and organisation.

Barriers and enablers to innovation to benefit customers in vulnerable situations

1. Have you or your organisation had any experience of the following which benefits energy customers with additional needs, in particular:
    a) Pushing for new ideas to be adopted?
    b) Designing new products or services?
    c) Developing new products or services?
    d) Bringing new ideas to market?
    e) Scaling up new products or services?
    f) Developing guidance to support companies?
    g) Organising events to share ideas etc.

Please explain what, when.

2. What are your lessons learnt from this experience? What works well? What could be improved?

3. Where did the original idea for the change/service/product come from?

4. What is your understanding of the term 'inclusive design', 'universal design', 'design for all'? What are your views on it?

5. Ofgem has promoted the use of the BSI for inclusive services? Is it something your organisation has ever used/tried to use? If yes what are your experiences of it, if no, what do you think are the reasons for that?

6. What more do you think could be done to promote the use of inclusive design?

Looking at the list below:

What would you say are the *five* most effective **enablers,** which help to drive new products/services/improvements that benefit energy customers in vulnerable circumstances? Some of the following are internal organizational factors, some external.

Internal

I. A dedicated individual within the organisation driving the agenda
II. A strong business case
III. Vulnerability as an organizational priority
IV. Space and time to innovate
V. Resources e.g. budget, staff.
VI. Clear leadership and senior management support
VII. Joined up approach to vulnerability and innovation
VIII. Back office systems fit for purpose
IX. Training and skills
X. Other [please specify] ….

External

XI. Customer demand
XII. Guidance
XIII. Information sharing
XIV. League tables
XV. Reputational benefit
XVI. Awards
XVII. Regulation – stick e.g. licence conditions
XVIII. Regulation – carrot e.g. financial support
XIX. Government policy
XX. Other [please specify]…..

7. What are the five most significant **barriers** to driving new products/services/improvements that improve service and quality of life for energy customers in vulnerable circumstances?

Internal

I. Risk avoidance – fear of failure
II. Not an organizational priority
III. Insufficient space and time to innovate
IV. Insufficient business case
V. Lack of resources e.g. insufficient budgets or staff
VI. Lack of leadership or senior management support
VII. Isolating responsibility for innovation or vulnerability – seen as ‘separate’
VIII. Back office systems not fit for purpose
IX. Insufficient training and skills
X. Complexity
XI. Short term thinking
XII. Silo mentality – business case falls across teams
XIII. Other [please specify] ….

External

XIV. Silo mentality in government/regulators
XV. Government policy
XVI. Short term thinking
XVII. Technological barriers/lack of infrastructure
XVIII. Lack of customer demand/customer need
XIX. Lack of guidance
XX. Lack of skills and understanding
XXI. Lack of incentives
XXII. Regulation - stick e.g. licence conditions
XXIII. Regulation carrot e.g. incentives
XXIV. Other [please specify].....

7. What do you see as the main benefits to companies of developing products and services which meet the needs of all consumers, including those in vulnerable situations?

8. Have you ever worked with consumer groups/charities/companies to jointly develop a new product or service to benefit vulnerable customers? [if yes, please explore]

9. Learning from good practice: how do you currently learn about and share vulnerability good practice?

10. To what extent is vulnerability good practice currently shared between companies?

11. Can companies genuinely share good practice, which supports customers in vulnerable situations given the commercial and reputational drivers to be the best? If no, what then is the solution?

12. To what extent do league tables and awards drive action to support vulnerable energy customers? What else could drive improvements?

Technological innovation and horizon scanning

13. What do you see as the key opportunities and benefits to vulnerable energy customers of the smart meter rollout?

14. What particular benefits could SMETS 2 meters deliver to vulnerable energy customers?

15. Are there any risks to vulnerable energy consumers of smart metering and SMETS 2 meter rollout?

16. Thinking about the Internet of Things and smart homes – what do you see as the key opportunities for customers in vulnerable circumstances?

17. Are there any risks and how can these be mitigated?

18. Are there any barriers to realising the potential benefits to vulnerable energy consumers of these kinds of technological innovations? If so, what, and what could be done to address these?

19. How could we maximise the uptake and use of new technology which is beneficial to vulnerable customers? (Smart Energy GB)?

20. How could we mitigate any potential risks?

21. Will new technologies result in a step change in access to, and granularity of data about consumers and their behaviour? If so, how?

22. How could companies better use data to identify and support energy customers in vulnerable situation?

23. Looking to the future – what opportunities and risks are there to the way companies support customers with additional needs:
    - Market change e.g. multi-utility offerings
    - Social e.g. income, population change
    - Economic
    - Political
    - Regulatory e.g. 24 hour switching
    - Technological e.g. others not mentioned
    - Other?

    How do we mitigate against any risks.

Improvements

24. In your view has there been much innovation and improvements *in general* in the way that companies across a range of sectors respond to the needs of customers with additional needs in the last 5 years? In particular:
    - Those on low incomes
    - With additional needs
    - To support customers in rural areas

25. On a scale of 1-5 with 1 being not at all innovative and 5 being very innovative, how good do you think *energy suppliers* been at improving their approaches to support customers in vulnerable situations?

26. On a scale of 1-5 with 1 being not at all innovative and 5 being very innovative, how good have energy *networks* been at improving their approaches to support customers in vulnerable situations?

27. What do you think are the current strengths and weaknesses of the current regulatory and policy framework? What works well/what might be improved? To what extent do these approaches support innovation to support vulnerable customers? Explore views on:
    - LCNF/NIC
    - The Gas Discretionary Reward Scheme
    - The EDI Stakeholder Engagement and Consumer Vulnerability (SECV) Incentive

- Regulation such as PSR
- Other

What more could be done?

28. In your view, what **one key improvement** could the following parties make to improve service delivery and quality of life of energy customers in vulnerable circumstances (please name at least one) either now, or in the future?

- Government
- Regulators
- Energy networks
- Energy suppliers
- Third parties intermediaries e.g. switching sites, brokers, disruptors?
- Technology manufacturers
- Data services companies
- Consumer representatives
- Consumers
- Other?

Appendix 5 - The Energy for All Innovation Day - The judges

The independent judges at our Energy for All Innovation Day in April 2017 are outlined below. As mentioned: importantly, there was not always agreement on what *was* deemed to be 'good' practice and effective innovation. Even some of our award-winning innovations split the judging panel/room so winning innovations are not necessarily supported by a given judge.

Ed Rex



Ed, himself profoundly deaf, is a constant campaigner looking to improve accessibility for people with deafness and hearing loss. As a Marketing Manager at Action on Hearing Loss, the UK's biggest hearing loss charity, Commercial Services, he undertakes market research in order to identify market requirements for current and future assistive technology products to support eleven million people with deafness and hearing loss in the UK. His team promotes and raises awareness up-and-coming assistive products to private individuals or to organisations and businesses.

Mervyn Kohler



Mervyn Kohler is External Affairs Manager at Age UK, having been Head of Public Affairs at Help the Aged since 1984 before it merged with Age Concern in 2009. He has more than 30 years experience working on cross-cutting issues and new developments in policy and practice, including in energy and fuel poverty. He has a number of board and trustee positions including as Chair of the Elderly Accommodation Council and on the Board of Smart Energy GB, among other positions. His experience also includes as Chair of NEA and as a member of the Fuel Poverty Advisory Group.

Jake Beavan



Jake Beavan works as a Senior Policy Researcher in the Citizens Advice Energy Team, his brief covers vulnerable consumers, debt and prepayment meters in the energy market. Before joining Citizens Advice in January, Jake worked for the Local Government Association. He has also held a number of other research and policy roles in and around Westminster.

Alexia Karageorghis



Alexia is Staff Development Coordinator at Mencap. Her role involves working closely with some of her colleagues with a learning disability in the Campaigns team to provide them with the day to day support they need to achieve and develop in their jobs. Among her many activities, she creates Easy Read documents, as well as facilitating Mencap's Learning Disability Spokesperson Group, which acts as a sounding board to check the accessibility of Mencap's materials. Inclusion and empowerment of customers with learning disabilities is at the heart of her role. Prior to working at Mencap she was a crisis support worker with Herts Mind Network.

Hugh Goulbourne

Hugh is Chair the National Right to Fuel Campaign (NRFC) and has a track record of developing and delivering community energy innovations and social action programmes. This includes but is not limited to as Programme Director for:

- Collective Power, a pathfinder energy switching project sponsored by the DECC Change in partnership with six Yorkshire local authorities.
- Kid Power, a smart meter behaviour change pilot sponsored by DECC.
- Energising Communities, a Cabinet Office sponsored social action project with six housing associations.
- Big Energy Race, an online energy demand reduction campaign in partnership with Ofgem, the Energy Saving Trust, British Gas, EDF Energy and Npower.
- Shoreditch Heat Network, Hackney.
- Yorkshire and Humber Carbon Capture and Storage.



Hugh's past experience also includes: more than 10 years as a successful commercial lawyer; author of 'Waste Not Want Not', on clean energy support mechanisms; Committee member for NEA's Health and Innovation. As Chair Hugh will be launching NRFC's new energy innovation programme next month.

Danni Crosland

Danni Crosland is the Director of Operations, at National Energy Action (NEA). She is responsible for the oversight and delivery of NEA's practical projects including:



- Providing training, advice and guidance on good practice in delivering energy efficiency services to low income households.
- Strategic and operational partnerships to deliver on activity to alleviate fuel poverty.
- Community engagement & outreach activity.
- Smart Energy GB in communities.

Her background also includes: coordinating a team of volunteers and paid debt caseworkers at Thanet District Citizens Advice; being a trustee at the latter and a member of East Sussex Energy Partnership, SSEPD Resilience Panel and the BEIS led Consumer Reference Panel (Smart Meter Implementation).

John Worsfold

John is Solutions Implementation Manager at the Royal National Institute of Blind People, responsible for exploring opportunities and possibilities of new technologies to support blind and partially sighted people. This includes RNIB's wayfinding work, accessible smart meter in home displays and virtual reality eye condition simulations that create greater awareness of what issues might be faced within the environment. With a background in electronic engineering and communications, he has more than 17 years experience as a professional innovator. This includes at the European Space Agency (ESA), National Endowment for Science Technology and the Arts (NESTA) and the European Commission. He is a published author on inclusive and assistive technologies and has won awards including the Google Impact Challenge with the RNIB SmartGlasses, also recognised by Nominet trust 100 as one of the world's most inspiring examples of social innovation.



Minesh Patel



Minesh is Senior Policy Advisor at the disability charity Scope. He leads on Scope's policy work to tackle disability related costs faced by disabled people for things such as energy and insurance. He was a member of the secretariat to the Extra Costs Commission, a year-long inquiry by Scope that looked at what businesses, government and regulators can do to drive down the cost of living for disabled people. Prior to Scope, he held operational, policy and research roles at a number of social enterprises and in social housing.

Caroline Jacobs



Caroline is Head of Development at the Research Institute for Consumer Affairs. She has over 25 years experience in business development and service delivery and has a particular interest in inclusive design and helping to design and promote accessible products for all. At RICA this has included providing industry and consumer organisations with research and advice relating to vulnerable consumers' needs and experiences – across retail, telecoms and energy sectors. E.g. a specialist programme involving customers with mild to moderate dementia, usability testing of various home technology including digital TV, mobile phones, smart metering in home displays and central heating controls.

Alison Blackwood



Alison is Senior Campaigns and Policy Advocate at StepChange Debt Charity, responsible for ensuring client engagement in the organisation's campaigning and policy work. Before that she worked as a Senior Campaigns Officer at Citizens Advice and Head of Policy & Knowledge at London Voluntary Service Council. Alison has been a trustee of various small London charities and Chair of a local community enterprise organisation, Communities in Focus.

Appendix 6 – Guidance provided to judges to help them assess innovations

The following is the guidance we provided to the independent judges at our Energy for All Innovation Day in April 2017 to help them assess the vulnerability innovations.

Judging – food for thought

We want you to bring your own views and approach to the judging process. But to help you get the ball rolling, below are some suggested factors you might like to consider when assessing the innovations:

	Criteria	Description
1	**Demonstrates Benefit**	❑ Does it deliver benefit to energy customers in vulnerable situations (as far as can be expected given the nature of the innovation)? E.g. evidence of customer satisfaction, staff feedback, numbers etc. ❑ Does it deliver under multiple themes e.g. good at identifying vulnerability, affordability, safety etc? ❑ Where appropriate, are they measuring benefits to other parties? ❑ Does the innovation deliver a better service or experience? Future benefits?
2	**Replicable & Scaleable**	❑ Could another energy supplier or network roll it out, use it, support it, replicate it or do something similar?
3	**Cost-effective**	❑ Have they evaluated cost effectiveness where possible? ❑ Does it deliver cost savings to other parties or help make funding go further?
4	**Accessible & easy to use**	❑ Where relevant is it easy for the customer or company staff to use? ❑ Is it inclusively designed e.g. meet accessibility standards? Was it developed with customers?
5	**Proactive & enduring**	❑ Is it proactive – preventing a problem or empowering consumers? ❑ Is it future-proofed?
6	**Collaborative**	❑ Does it support wider public interest goals e.g. sustainability, health, resilience, security? ❑ Does it support the work of other organisations? Have they shared their learning?
7	**Strategic**	❑ For energy companies - is it strategic – fitting clearly within a wider vulnerability strategy? ❑ It is well-targeted? (where appropriate) ❑ Does it tackle a real need?
8	**Supported**	❑ Given the stage of development, have they maximized the benefit e.g. appropriately promoted the innovation to those in need, joined it up with other programmes? ❑ Do they have a clear vision as to how they will develop it and share it further?
9	**Authentic**	❑ Do you feel they have given a balanced assessment of the initiative when asked including any limitations?

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