SUSTAINABILITY FIRST – PAPER 10.

The Electricity Demand-Side and Local Energy : how does the electricity system treat 'local'?

Annex 2 : Case Study for Sustainability First

Community Electricity Demand Reduction at Substation-Level.

(SSE EDRP Community Trial)

Examining the benefits and challenges of local electricity demand reduction.

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This case-study for Sustainability First draws from Megan McMichael's PhD research on the SSE EDRP Community Trials.

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Introduction

1. The purpose of this Annex is to examine the benefits and challenges of local electricity demand reduction from a social perspective. This annex is based on the Scottish and Southern Energy community trials of the Energy Demand Research Project (EDRP). Three rural communities participated in these trials, aiming to reduce their household electricity consumption by 10% over a two year period, as measured at local sub-stations, in order to obtain a prize of £20,000 for the community. The assessment for meeting the target was based on a "10% reduction for three consecutive months, December 2009 to February 2010 compared to the same period in 2007-8" (Raw & Ross 2011, p.2). Two of the communities (those in England and Scotland) met their target and were awarded the full prize, while the third (the one in Wales) was awarded half the prize for the achievements they made. It should be noted that the aim was for overall reduction in electricity use, rather than focusing on peak electricity demand reduction.

2. The case study information presented here is partially based on PhD research titled *Social capital and the diffusion of energy-reducing innovations in UK households* which examined the influence of information-seeking through social networks on the diffusion of technical and behavioural energy efficiency measures (McMichael 2011). The PhD data collection took place in 2009/2010, toward the end of the EDRP trials. Using a mixed methods approach, a questionnaire was distributed to households in each community to gather information about information-seeking in social networks and adoption of energy efficiency innovations (see McMichael 2013 for sampling details) and focus groups were subsequently held – one focus group with each local community group and at least one other with residents of each community who had agreed to participate in further research after returning their questionnaire. Some further information was gathered subsequent to completion of the PhD research. This report also draws on relevant literature from the EDRP trials (Raw & Ross 2011) as well as other related literature on communities and energy efficiency.

3. In summary, some of the main lessons to be drawn for utilities attempting to reduce electricity on a local scale are:

    - **Pairing up with a community group has benefits to the utility** (e.g. local, trusted contacts can more easily reach community residents and disseminate information) **as well as to the community groups** (e.g. availability of resources and energy information & advice)**. The community group should lead a local effort and be the main 'face' of a campaign, where possible.**
    - **Identifying communities with a history of energy efficiency interest**, and particularly groups that have worked on similar initiatives, **provides ready-made communication networks through which messages can be quickly spread and targets more quickly reached. Communities without established groups, but which create new groups for an initiative, may require more time** to form and establish themselves, build networks, raise awareness and inspire action.
    - **Communities are very unique; it is important to recognise that what works for one community, may not work for another. A good degree of flexibility may be necessary in organising demand-side interventions.**
    - **Good communication between a utility and a community, as well as between a community group and community residents and other stakeholders, is essential to the timely success of community energy efficiency interventions.**
    - **It is useful for community groups to utilise multiple communication channels with community residents and to create links with other organisations, local government and local businesses.**

Background

4. In 2007, Ofgem announced the participants of the Energy Demand Reduction Project (EDRP), a Government-initiated research project which was part-funded by Government. The bid from Scottish and Southern Energy plc (SSE) was unique in that it included *community trials*, in addition to the nation-wide trials expected in the EDRP bids. These community trials would use similar interventions, namely smart meter installations, but focus on energy reductions from whole communities instead of individual households with the objectives of understanding community-level interventions, gaining experience of the means to reduce electricity demand over a 2 year period of time (Raw & Ross 2011). SSE chose three rural communities: the village of North Leigh (in Oxfordshire, England), the village of St Athan (in Vale of Glamorgan, Wales) and the small town of Alyth (in Perthshire, Scotland). These three communities were chosen because they had a large percentage of SSE customers, local substations at which to measure electricity, and either a local community group active in energy or broader environmental issues, or, in the Welsh village, a willingness to create such a group.

5. SSE set a target for each community to reduce their electricity consumption by 10% over a 2 year period. This target would be measured at the sub-station level, comparing a similar three-month period of electricity use at two points of the intervention (i.e. at the start and 2 years later). Raw & Ross (2011) note that "the substation data do not represent each community exactly," for reasons including: areas of each village or town may not have been included, and sub-stations measured all electricity (e.g. local businesses, too) not just that used in the residential section, but indicate that the substation data "reflect[ed] a significant proportion of the community and generally will cover the key central areas of each community" (p.2). The trials focused on households, but for reasons of measurement, each community also tried to encourage businesses to reduce their electricity consumption as well. The award for reaching the target would be £20,000 for each community; each community was to decide how to allocate the prize money, but generally it was expected that it would be used for community energy projects.

6. The efforts to achieve the 10% reductions were led by the community groups, with on-going support from SSE. In parallel, and in conjunction with, the community group programmes, SSE rolled out a number of interventions. These were initially intended to be rolled out on a systematic basis, but it rather quickly became evident that the schedule of interventions would need to be tailored to each community. The primary purpose of the EDRP was to trial smart meters. SSE approached their household customers individually, offering an opportunity to replace electricity (and sometimes gas) meters with smart meters. Other interventions included, *inter alia*: insulation offers, either free or at discounted prices; vouchers for A-rated appliances; free compact fluorescent light bulbs; infrared thermal imaging of homes in some communities; free in-home energy displays; first-hand energy advice from SSE representatives. As the overall assessment of electricity use was taken at substation level, as well as comparing samples from the villages to surrounding homes (Raw & Ross 2011), it is impossible to know which interventions may have contributed to the greatest reductions in electricity use. Each community group disbanded subsequent to the trials, but hoped that their efforts had an enduring effect.

North Leigh

7. North Leigh (which covers North Leigh, East End & New Yatt) is a village in West Oxfordshire composed of approximately 800 households. North Leigh has a Memorial Hall which contains a community hall, a post office, a convenience shop and a local library. North Leigh also has a primary school, a small industrial estate, three churches, a village green and two pubs. There is a local newsletter called the Nor'Lye News.

   Some focus group respondents of the PhD research indicated that there is no natural 'centre' to North Leigh, and that it sprawls. There were also indications that people are sociable, but that the community is made up of several different social groups. They have

vibrant churches and drama clubs, active youth groups and primary school. Most people live in the village full-time.

8. Energy efficiency history – Prior to the SSE intervention, North Leigh had been active in promoting energy efficiency. In 2005, a local group called the North Leigh Energy Efficiency Project aimed to become Oxfordshire's leading energy efficient community. Working with the Thames Valley Energy Centre (TVEC, an energy efficiency advice centre partially funded by Energy Saving Trust), they aimed to measure and reduce energy and ultimately aim to establish and 'energy label' for the village. Having obtained funds from Oxford University's Environmental Change Institute, a feasibility study was conducted, supported by TVEC, West Oxfordshire County Council and the Energy Saving Trust, in order to establish the aim and method for achieving the goal of an energy label for the village (Challenge North Leigh 2009). Between 2006 and 2008, TVEC collected gas and electricity data to produce a baseline and establish savings.

9. Community group – Once approached by SSE, members of the North Leigh Energy Efficiency Project agreed to co-ordinate efforts to promote the SSE aims. This group was called *Challenge North Leigh* (CNL). There was an initial meeting in June 2007 and a larger second meeting (September 2007) which was led by an external sustainable energy consultant to officially launch the initiative. The meeting in September was opened to members of the community. Subsequently, CNL held regular meetings, organised events, and distributed information to raise awareness of energy efficiency. The structure and activities of CNL evolved over time. It took some months for both SSE and CNL to devise a strategy that suited the local community in achieving the 10% electricity goal. The group was originally very focused on energy efficiency, based on the guidance for the SSE initiative, but adapted to encompass wider environmental initiatives in order to reach a broader range of community members. The CNL group initially set up a steering group, and eventually appointed one person as the leader of the group. This group was initially led by the leader of the North Leigh Energy Efficiency Project, who seemed to be regarded as a key opinion leader on energy efficiency in the community. That person remained active in the campaign throughout, though had to step down from leading the group early on for personal reasons. Another leader took charge and other responsibilities (e.g. Treasurer, etc.) were taken on by other members of the core group of around 10 members.

10. Community group activities – The group established a logo for the project and printed t-shirts with the logo and established & maintained a website. The group met regularly, usually monthly, and any initiatives they chose to undertake were supported financially by SSE, if approved. They advertised in the local paper (the Nor'Lye News), with leaflets, banners and updated they website with minutes of meetings, advertisements for events and energy efficiency advice. One of the initiatives was a calendar, which the

group created, containing pictures of local residents and the 10th of each month marked as a 'Power Down' day to remind people of the 10% challenge. Another was creation of an indoor thermometer to distribute to community residents. CNL organised several events, holding a fair about every 6 months (Raw & Ross 2011), at which SSE were present to give advice and sometimes promote offers (e.g. vouchers on insulation). One such event, for example, included stalls, a hog roast, and a bouncy castle, along with people available to give advice on energy efficiency. There were other events, including 'Give and Take' events and screenings of movies.

11. SSE (called Southern Electric in England) activities – A member of SSE was designated as the liaison with CNL; there was a change of staff part way through (June 2008). The SSE staff member attended most of the CNL meetings. Additionally, there was also an SSE representative who was available to answer questions of residents and promote the initiative. This person was from the local area, and provided door-to-door advice in the early stages, handing out in-home energy displays, and then held a weekly 'surgery' in the library afterwards. This representative also attended the CNL meetings.

    SSE supplied smart meters to many of its customers in North Leigh, which involved replacing existing electricity meters with the new smart meters. The project started with SSE testing the smart meters in about 6 houses. There were delays with the smart meters, due to the manufacturers and technical problems. The installations began to be trialled in North Leigh in September 2007, but the full installation programme began in May 2008, and concluded at the end of 2008. According to Raw & Ross (2011), between 160 and 190 smart meters were installed by the end of the trial.

    Other interventions, in co-operation with CNL events and activities, included: thermal imaging of homes and the Memorial Hall; provision of in-home energy displays to members of the community; free cavity and loft insulation; updating the 'light bulb library'; vouchers worth £25 to purchase low-energy bulbs from a local shop; £500 vouchers for A and A+ rated appliances. Additionally, SSE provided information booklets (Raw & Ross 2011).

    SSE installed an LCD display in the Memorial Hall which displayed a series of images (via PowerPoint) related to the energy efficiency initiative, including monthly substation readings.

12. Results – North Leigh achieved its target of a 10% reduction in electricity use and was awarded the £20,000 prize money. Additionally, a sample of households in North Leigh showed higher reductions in electricity consumption as compared to control groups of SSE customers in nearby areas (Raw & Ross 2011). The prize money was used to install photovoltaic panels and an air source heat pump in the Memorial Hall. Subsequently, the

CNL group disbanded. Following on from the initiative, there was an attempt to start a water conservation initiative in North Leigh, but it did not come to fruition.

St Athan

13. St Athan is a former farming village in the Vale of Glamorgan, Wales composed of approximately 540 households. The village has a church, a school, a nursery, a library, a poster office, a pharmacy, a community centre, several convenience stores, a few hairdressers, and two pubs. St Athan is known for being the location of a Royal Air Force (RAF) base, but RAF St Athan is located just northwest of the village, and was not included in the SSE intervention.

    There were sentiments in a PhD focus group in St Athan that there was no natural 'centre' to the village, and that there were many separate social groups. During the trial, a housing development was built in St Athan, which would have had implications for electricity use at the sub-station level.

14. Energy efficiency history – There were no known previous energy efficiency initiatives in St Athan on a community scale previous to the SSE trial.

15. Community group – This was the only of the three community trials which did not have an established group that supported energy efficiency or wider environmental issues. SSE helped to create a group by engaging with local residents and others who were active in other local groups. Part of this recruitment effort involved sending invitations to organisations and businesses in the area. SSE also worked with the local energy efficiency advice centre, called South East Wales Energy Agency (SEWEA), which developed the initial programme, and was involved for the first few months. Twenty people were initially invited, fourteen attended the first meeting, and eight of those ultimately signed up to the on the committee. A local county councillor who lived in a neighbouring village became the leader of the group. The group membership changed over time, e.g. the original secretary moved out of the village. The group was called *Get Smart with St Athan* (Get Smart). The group liaised with, and often included, an Energy Officer from the District Council as well as a representative from the charity Groundwork who spearheaded engagement with schools.

    According to Raw & Ross (2011), there were communication problems between SSE, SEWEA and the Get Smart group in the early stages, resulting in a loss of a few months, and subsequent allocation of a new SSE representative and a re-launch of the group in a meeting in late May 2008. "The meeting re-established the opportunity for the community trial to be undertaken, with the issues having an avenue to be addressed" (Raw & Ross 2011, p.11).

16. Community group activities – The Get Smart group main aims were to raise awareness of energy efficiency and encourage residents to reduce their energy consumption to meet the SSE 10% reduction target. A competition amongst school children resulted in the name of the initiative and logo. The Get Smart group communicated the message of energy efficiency by creating leaflets and information packs for distribution, posters placed around the village, writing articles in the village newsletter (GEM) and the school newsletter, and holding pub quizzes. The group was involved in a number of events, setting up stalls at the annual Funday, for example, and having other events such as coffee evenings (Raw & Ross 2011). They considered it most successful when they 'piggybacked' on events held by other people, and set up a stall, for example. There were feelings amongst this group of feeling a bit left behind, or being the 'guinea pig' of the trials; for example, they would have liked to have had support the door-to-door SSE representative earlier (see below), and perhaps felt they did not have the same resource capacity since they were a new group created specifically for the purposes of the SSE trial.

17. SSE (called SWALEC in Wales) activities – Again, an SSE person was designated as the liaison with the community group. Initially, the same person was the liaison for all three communities (being based at SSE headquarters in Reading). However, when that person left the company in June 2008, SSE designated a more local person as liaison for each community. After June 2008, the new SSE liaison attended all, or most, of the Get Smart regular meetings. Another SSE employee was also assigned to offer advice to local householders, but not until 2010; this employee would approach householders door-to-door and held a surgery once a week in the St Athan library.

    The first smart meter of the trial was installed in a test home at the end of April 2008. By November 2008, almost 150 smart meters had been installed, some of which were dual-fuel (i.e. gas and electricity). Other interventions included distribution of in-home energy displays; offering free low-energy light bulbs; offering low-energy decorative lights at Christmas time; insulation offers; and eco-kettles. The Get Smart group were also instrumental in replacing old Christmas lights for the village, saving 70% in electricity (Raw & Ross 2011). In addition, several other offers were considered, but either deemed unnecessary or encountered too many problems (e.g. thermal imaging, wind turbine on the school) or had very low take up of a handful (or less) homes (e.g. hot water tank lagging, Energy Performance Certificates, energy audits for businesses, discounted A-rated appliances) (Raw & Ross 2011).

18. Though St Athan did have lower electricity consumption in a sample of homes as compared to a sample of SSE-supplied homes in the neighbouring area (Raw & Ross 2011), St Athan did not meet its target of 10% reduction at substation, as compared to a baseline of 2 years previous. The group was awarded half the prize money, i.e. £10,000, for what it did achieve and the efforts made. This money was used to help fund a new

energy efficient boiler for the village hall. The Get Smart group disbanded subsequent to the end of the trial.

Alyth

19. Alyth is a small town in north east Perthshire, Scotland, comprised of approximately 1,400 households, according to the local group, and surrounded by several farms. Alyth has a town hall, several churches and church halls, a small museum and a library. There are around 100 registered businesses, including several hotels, pubs, a handful of garages and a classic car restoration specialist, and other shops.

    As in the other two villages, there were indications that there were many different social groups in Alyth. Alyth has a higher percentage of hard-to-treat homes (e.g. stone walls) than the other two communities.

20. Energy efficiency history - Energy efficiency had been a topic that had already received attention in Alyth due to local effort. The Alyth Environmental Group (AEG), which had been in existence for several years prior, focuses on broad environmental issues such as cleaning up the local stream and maintaining footpaths. Members of the AEG spearheaded the Alyth Climate Action Town (ACAT) project, which was established in 2005, aiming to create more sustainable lifestyles of businesses, groups and residents in Alyth. A primary aim of ACAT was to increase energy efficiency in Alyth, and in May 2006 they held an 'Energy Saving Exhibition' in the town. At this event, community members were given a chance to sign a pledge to reduce their greenhouse gas emissions. The group was locally active, promoting biomass heating at the local school, arranging thermal imaging of buildings, and leading other projects. The ACAT group was approached by SSE to promote the energy efficiency intervention which included installation of smart meters and a 10% reduction target for the whole community. ACAT agreed to support this initiative and called it the 'Alyth Energy Challenge'.

    Previous to the SSE intervention, SSE had developed a 16-turbine windfarm nearby in Drumderg, which was made operational in late 2008. In order to build this windfarm, lorries had to carry all the equipment for the wind turbines directly through the centre of Alyth, as this was the only route to reach Drumderg. There was apparently local opposition to the construction initially, but those participating in the PhD focus group indicated that it had raised awareness of sustainable energy issues.

21. Community group – The SSE project was considered as an initiative within the ACAT group, and was called the *Alyth Energy Challenge*. There was an active chair of ACAT, and additionally secretary, treasurer and media representative (Raw & Ross 2011). They met monthly for the purposes of the Alyth Energy Challenge. Initially, a local energy advice centre called Save Cash and Reduce Fuel (SCARF) was involved, as well.

22. Community group activities – The Alyth Energy Challenge group created a logo and printed t-shirts and window stickers so that households could show they were taking part in the trial. They had several events, including a gala and other energy fairs, and viewings of environmentally-focused films. They set up a library of in-home energy displays, where local residents could borrow them for a short time to try them in their home. The group advertised in the local newspaper, the Alyth Voice, and the local paper of the wider area, the Blairgowrie Advertiser. They created banners which hung at two ends of the town. They delivered leaflets to every household, created posters which were hung in town, and gave logo-emblazoned bookmarks to schoolchildren. The also created an 'energy badge' for Boy Scouts and Girl Guides to earn.

    Additionally, during the community trial, ACAT successfully made a bid to the Scottish Government for the Climate Challenge Fund. With this funding, the group began what was referred to by ACAT members as the 'street-by-street' insulation campaign. This street-by-street campaign began in November 2008 and concluded in May 2010. This campaign hired a part-time co-ordinator for the project, as well as additional energy assessors. They had a small drop-in centre called 'The Hub' in the middle of town which was open a few mornings and evenings a week. The initial task of the street-by-street campaign was to distribute Energy Saving Trust (EST) 'Home Energy Checks', which were questionnaires that asked about specific energy measures in a home. They distributed these to all 1,400 houses in June 2009 and received about 380 responses. The seven energy assessors visited these homes in the following weeks. The EST created 'home energy reports' from the questionnaires that had been distributed, making recommendations for each household. Generally these were sent to ACAT, and then the energy assessors took them to the respondent and explained what they meant and what could be done.

    Thus, there were at least two initiatives running in parallel, both focusing on energy efficiency[1]. Focus groups indicated that the Alyth Energy Challenge group thought that the Climate Change Funded 'street-by-street' campaign may have made a bigger impact than the SSE-backed initiative. However, information from a small focus group with residents indicated that householders may not have viewed the two initiatives as different, but rather as one campaign.

[1] In addition, Alyth also had access to a community benefit fund from the SSE local wind farm at Drumderg. The fund is meant for the benefit of local community groups to strengthen the community and improve quality of life, which could include energy efficiency measures, of both Alyth and a neighbouring town. It was not clear if the group had accessed the funding. Further, there was another initiative called Alyth 2020, which was mentioned in passing in the focus groups.

23. SSE activities (called Scottish Hydro Electric in Scotland) - SSE launched the intervention at an event in September 2007, though officially began in October 2007. Another event was held in November 2007, facilitated by a third party, to establish the development plan of the two-year project.

    The first two smart meters were installed in January 2008 in the homes of the project leaders of the 'Alyth Energy Challenge' group. In February 2008, BBC Scotland conducted radio and television interviews with Alyth residents and SSE staff. The full smart meter installation programme began in July 2008. At the end of November 2008, there were almost 300 smart meters installed (McMichael 2011).

    In May 2008, a selection of about 30-35 houses was surveyed with a thermal imaging camera. These were displayed at a community energy event in Alyth later that month. SSE also supported the activities of the ACAT group, which included insulation offers and provision of free light bulbs, in addition to awareness raising initiatives as described above. Further, SSE financed a light bulb library scheme, an electrician to rewire properties for low energy lighting, thermometer cards, stand-by devices, chimney balloons and vouchers for energy efficiency appliances (Raw & Ross 2011).

    An SSE employee was assigned to liaise with Alyth. Again, there was a change of staff around June 2008. After that point, the SSE liaison often attended the Alyth Energy Group meetings.

24. Results – Alyth reached their 10% reduction target, as measured at sub-station level. They were awarded the £20,000 most of which was donated to the Boy Cubs & Scouts and Girl Brownies & Guides. The Boy Cubs & Scouts used their portion of the prize money to insulate the scout hut and install a new boiler. The Girl Brownies & Guides used their portion to help re-build the Guide hut. The group working on the Alyth Energy Challenge subsequently disbanded.

Benefits and challenges of local demand side management

25. This summary draws on relevant literature on community energy and demand-side reduction and is partially based on observations made during the PhD qualitative research. Though evaluating community energy programmes was not the intention of the PhD research, and the findings from three case studies are not sufficient to make generalisations for all community populations in Britain, there are perhaps some general lessons that could be instructive to utilities or government initiatives for future community interventions.

Benefits of working with community groups

26. The support from SSE was likely an important element for the success of the community-led energy efficiency programmes. Though not specifically mentioned in the focus groups of the community groups, the groups did not appear to particularly struggle for finance or other resources, such as information and advice, which other community groups promoting similar initiatives – but without support from an energy company – have had problems with (Lockwood & Platt 2009; Seyfang et al 2012; House of Commons Energy and Climate Change Committee 2013 2013). This does not mean that the community groups did not encounter any financial and other constraints, but that the support from SSE may have helped overcome certain problems.

27. Equally, SSE most likely benefited from the local community members who made up the community groups, as they acted as intermediaries between themselves and the residents in each community. "Such groups often can make personal contact and can command a level of attention and trust from their constituencies" which would certainly have been missing in a large-scale, non-community-centred approach (Stern 2002, p.205).

28. The literature suggests that the benefits of pairing up with community groups are not simply due to utilisation of existing social networks. As Stern (2002) indicates, this approach is "most effective when [community groups] adopt the intervention as their own, perhaps adapting the message in the process to make it meaningful to their constituencies" (p.205). In the trials, each community created a name and campaign for the initiative, were committed to the two year programme, and sought to inspire their fellow community members to achieve the 10% targets. Further, the indications from the qualitative PhD research indicated that residents largely trusted the local community group members.

29. There were few direct negative statements specifically made about SSE. There were general concerns that arose in focus groups in each of the communities that residents sometimes did not trust energy advice from their energy supplier because, for example, as they believed it was not on the 'agenda' for the supplier to want to do so. Other evidence suggests that electricity and gas suppliers are amongst the least 'trusted and impartial' of energy information sources (Castle 2010). However, there were residents in the PhD focus groups who also said they *would* trust their energy supplier. Further, the presence of an SSE person in North Leigh, and to some extent (though late in the programme) in St Athan, was seen by community group members to give credibility to the initiative. It is likely that different people trust different sources of advice, and though it is beneficial for a community group to adopt and lead a local effort, information from other sources (e.g. energy companies, Energy Saving Trust, etc.) may be trusted by some.

30. In summary, indications from the case studies and the literature indicate the following benefits for utilities in working with community groups toward demand-side reductions:

    - **Pairing up with a community group has benefits to a utility or other commercial group (e.g. local, trust contacts can more easily reach community residents and disseminate information) as well as to the community groups (e.g. availability of resources and energy information & advice).**
    - **A community group should lead a local effort and be the main 'face' of a campaign, where possible.**
    - **Communication and advice from the energy supplier can add credibility to the initiative if executed sensitively and locally.**

Challenges of working with community groups

31. The pre-existence of an energy efficiency community group may bring benefits; the absence of such a group may present particular challenges. In the two case study communities where these existed, the target was met and the full reward given. In the one community where they had to create a group (St Athan), they received half of the reward. Reasons for the difference in St Athan may include: lack of social networks in place regarding energy efficiency; much more time necessary to establish the group; inexperience of working as a group before; no precedent for energy efficiency activities in the group or community; no 'organic' reason for establishing the group (i.e. it was based on SSE's suggestion, rather than coming from the community). From an energy supplier's perspective, working with established energy efficiency groups may be an easier option and require less time for information dissemination (McMichael 2011; Murray et al 2013). It is a useful model in that community members have credibility due to previously established personal contacts which are relevant to the topic (Martiskainen 2007) and can provide local help and 'handholding' (Murray et al 2013).

32. Each group appeared to struggle with momentum at latter points in their projects. Some felt they had done all they could do, or reached everyone that was interested. This could be disheartening when sub-station readings did not indicate the kind of reductions for which they were aiming. In a similar manner, community residents mentioned that recognition, e.g. featuring on local or regional news, would help them feel proud of their town and the initiative, thereby not only increasing awareness, but also possibly giving a fresh momentum to the campaign.

33. In summary, some of the challenges which utilities need to recognise when working with community groups include:
    - **Communities without established groups, but which create new groups for an initiative, may require more time to form and establish themselves, build networks, raise awareness and inspire action.**
    - **Positive feedback can help maintain momentum or boost morale, particularly at middle or latter points of a project.**

Communities are unique

34. The experience and result in each community was unique, despite being part of the same SSE trial; a full understanding can only be partially captured here. Differences would have emerged for a number of reasons: dissimilarities in resources, access and adoption of energy efficiency technologies, nature of the built environment, internal organisation, relationships with external organisations, leadership, geography, history, socio-demographic composition of residents, personalities. From a utility perspective, similar intervention attempts should recognise the individuality of a community culture.

35. Based on PhD quantitative research, distinctions were discovered in information-seeking preferences. The information-seeking culture in St Athan emphasised friends and family; in North Leigh and Alyth, respondents indicated they were a bit more willing to seek information from neighbours, colleagues or acquaintances (McMichael 2011). This perhaps could have resulted in residents in St Athan being less likely to approach acquaintances, such as the community group members, as much as residents would in the other two villages. This could imply that St Athan needed more time for the information to trickle down through acquaintances (e.g. the Get Smart group, the SSE representative, etc.) and then through friends & family.

36. SSE initially intended to systematically roll-out a series of interventions of smart meters, insulation offers, etc. but technical issues with the smart meters and communication with the community groups made it clear that the interventions would have to be tailored to each community, particularly with regard to timing (e.g. smart meters delayed in all communities) and the focus of the group activities. Once a more flexible focus and approach was taken, the groups seemed to feel more comfortable. For example, in North Leigh, the focus was strictly on energy efficiency to start, but broadened to include wider environmental issues which the community group felt were particularly relevant to people in the area. It is also important to allow for flexibility in focus and structure over time (Stern 2002).

37. In summary, it is important for commercial organisations to remember the following if approaching community groups regarding energy efficiency programmes:

    - **Communities are very unique; it is important to recognise that what works for one community, may not work for another.**
    - **It is important to try to understand local or cultural distinctions to best understand information diffusion.**
    - **A good degree of flexibility may be necessary in organising demand-side interventions.**

Organisational lessons

38. In each community, there were instances when improved communication could have perhaps aided in trust-building and consistency of messages. For example, according to Raw & Ross (2011), there appeared to be some communication issues in St Athan between the community group, a local energy efficiency advice centre, as well as SSE. The issues were resolved, but resulted in delaying the start of the programme in that community. As well, having a more locally-based SSE person as the community liaison in each case study may have added a consistency of communication that had benefits over one SSE representative trying to be the main contact for each community, as that person would, e.g., not be able to be as physically present at every meeting, given the distances.

39. In focus groups, community residents were asked what they would recommend to the community groups regarding 'spreading the message'. Their responses included: make personal contact with residents; leaflets through the post tend to look like junk mail; make the community feel special through recognition on television or local paper; engage with schools; it is more effective if it is community-based, with a passionate leader; do not make the message prescriptive or preachy; make sure events are not half-hearted or unorganised. Further, the door-to-door actions in each community seemed particularly useful, whether they were done by members of the community or SSE representatives. Having articles and advice in the local paper were mentioned by several respondents, but then others (particularly community group members) doubted that the local papers were read very widely in the communities. A website also seemed a good way to advertise events and advice. As well, the LCD screen that SSE put in the Memorial Hall in North Leigh, with a PowerPoint loop of energy feedback and advice, was a central place to reach local people.

40. The events that were held in each community seemed to be the highlights of each initiative. Whether the groups organised their own events (as in North Leigh and Alyth),

or 'piggybacked' on other events and set up a stall (as in St Athan), they had a chance to see many people in a short space of time and raise awareness of the energy efficiency initiative.

41. Each group had a leader, and this role seemed quite important. The leader of each group was central in leading the group, and often in liaising with SSE (though sometimes this role was done through another member, e.g. secretary), as well as being the public face of the group in the local community. Focus group findings indicate a strong leader was important. There did appear to be different types of leaders, as shown in North Leigh, where an established 'opinion leader' was also important in raising awareness and being a contact person (Rogers 2003).

42. Each community had help from, or worked with, other organisations, e.g. local or district councils; Boy Scouts / Girl Guides; local charities and businesses; schools; churches. It is likely that involving local organisations may have added to the community spirit, as well as raising awareness amongst groups of people they otherwise might not have reached.

43. In summary, some organisational lessons gleaned from the case studies included:

- **Good communication between a utility and a community – as well as amongst all other stakeholders in a campaign – is essential to the timely success of community energy efficiency interventions.**
- **It is useful to have multiple communication channels with community residents, and particularly door-to-door (or face-to-face) communication**
- **Local events are important as a focus and motivational factor for community groups and residents**
- **Strong local leadership is important for credibility and trust of community members.**
- **Creating links with other established groups, organisations, local government and local businesses can increase awareness and may add more community spirit to the initiative.**

Information-seeking amongst community residents

44. The quantitative self-completion survey which was a part of McMichael's (2011) research yielded further information on information-seeking in the case study communities, particularly in relation to adoption of energy efficiency technologies and behaviours.

45. Seeking information from personal contacts was generally associated with higher adoption rates of energy efficiency technologies, though it depended on the technology type (e.g. more people sought information about smart meters and in-home displays, which were innovations that people were more likely to be unfamiliar with, than insulation, lighting, etc.) and community. Specifically, in all three communities, respondents were between two and four times (depending on technology type) more likely to adopt smart meters or in-home energy displays if they sought information from someone they knew (McMichael & Shipworth 2013).

46. Respondents in each community indicated they would be just as likely to ask someone they knew for information on energy efficiency, as to approach an organisation (e.g. local council, EST) or use the media (e.g. internet, leaflets) (McMichael & Shipworth 2013). Leaflets and websites will be important, but may only be useful for a fraction of residents when first looking for information; having local people on-hand to answer questions, direct queries, or just to discuss would thus be a benefit for those seeking information on local campaigns or specific energy-related questions.

47. Findings showed that residents in North Leigh and Alyth were more likely to adopt smart meters or in-home displays with each additional person with whom they spoke; in Alyth, residents were more likely to adopt insulation / draught-proofing or a behaviour change with each additional person.

48. In summary, the following lessons about information-seeking may help in planning demand-side response initiatives:
    - **Supporting information diffusion through personal social networks can help lead to higher rates of adoption of energy efficiency measures.**
    - **It is important to use various forms of communication with community residents, including interpersonal contact.**
    - **Community energy campaigns could encourage householders to speak to multiple people (e.g. neighbours in similar situations, or others who have adopted) to encourage higher adoption rates of energy efficiency initiatives.**

Conclusion

49. Based on three case study communities, there are many benefits, as well as challenges, for utilities wishing to address electricity reduction on a local scale. Partnering with a community group – ideally one that is already established – is of primary importance, as it can yield benefits for both the utility and the community. It is also important to remember that ‘blanket’ approaches will not be as effective as those tailored to individual villages and towns. Communication amongst all stakeholders is important throughout any such initiative.

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