RE:NEW demonstration phase summary

Summary

The RE:NEW demonstration projects were successful. Below is a summary of the top-line savings:

- 8,119 homes treated
- Annual savings per home:
  - 0.79 tonnes CO₂ broken down as follows:
    - 0.3 tonnes CO₂ easy measures
    - 0.49 tonnes CO₂ where further measures are installed
  - £154 on fuel bills broken down as follows:
    - £76 saved from easy measures
    - £78 saved from harder measures where they were installed
- Total annual savings from the demonstration projects:
  - 2,958 tonnes CO₂ broken down as follows:
    - 2,439 tonnes CO₂ easy measures
    - 520 tonnes CO₂ harder measures
  - £700,600 on fuel bills broken down as follows:
    - £617,500 saved from easy measures
    - £83,100 saved from harder measures
- Average penetration rates of 24\(^2\)%:
  - Ranging from 7% to 35%

Objectives

This report summarises a more in depth evaluation report. The objectives of the evaluation are to:

- Evaluate how effective the demonstration project phase was as a whole.
- Evaluate which elements of the demonstration projects were successful and should be replicated.
- Identify key learnings from the demonstration project phase – good or bad.
- Identify where gaps in knowledge or understanding still exist and how the rollout phase can aim to improve understanding around those areas.

Background

1 This figure will increase as more referrals are converted into installations as there necessarily is a time lag between referrals being made and installations occurring
2 This is the penetration rate of numbers of homes visited as a proportion of those that were targeted with marketing materials
RE:NEW (formerly known as HEEP) is a collaborative project of home energy retrofit for London’s homes and is a partnership between the LDA, GLA, London’s boroughs, London Councils and the Energy Saving Trust. Its key objective is to **support carbon reductions from London’s homes, using an area-based, whole house approach.**

RE:NEW was informed by the outcomes of previous energy efficiency projects including the Green Concierge Service and the No. 1 Lower Carbon Drive. These provided key recommendations which informed RE:NEW’s further objectives:

- To increase uptake of energy efficiency measures, especially in harder economic times, the primary offering will be based around quick wins, offered free to all householders.
- To improve the ratio of people taking action as a result of the programme, behavioural measures and support will be designed into the programme from the outset.
- To guarantee the highest lifetime savings from the programme and increased uptake of installed measures, behavioural measures built in from the start will be followed up with longer-term energy efficiency retrofit measures such as loft and cavity wall insulation.

The RE:NEW model has been developed through 2 phases to date:

1. Three technical trials in Croydon, Hillingdon and Southwark between April and July 2009 in which 817 homes received visits.
2. Nine demonstration projects between November 2009 and July 2010 in which 8,119 homes were visited. The projects were run in Camden, Croydon, Haringey, Harrow, Havering, Hillingdon, Kingston, Lewisham and Southwark.

This report summarises the demonstration project phase, presenting overall results, individual examples of good practice and other lessons learned that should inform the rollout of RE:NEW from Autumn 2010.

### Overall evaluation of the demonstration project phase

**Reduction of carbon emissions**

Overall, the demonstration phase has been successful in its primary objective of achieving carbon emissions reductions from easy measures and installed measures from referrals. The below table shows the gross total annual and lifetime CO₂ savings from easy measures alone; installed harder measures and the programme as a whole against the borough average and the household average:

<table>
<thead>
<tr>
<th></th>
<th>Total CO₂ savings for programme (tonnes)</th>
<th>Average CO₂ savings per borough (tonnes)</th>
<th>Average CO₂ savings per home (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual CO₂ savings from installed easy measures</td>
<td>2,439</td>
<td>271</td>
<td>0.30</td>
</tr>
<tr>
<td>Lifetime CO₂ savings from installed easy measures</td>
<td>26,909</td>
<td>2,990</td>
<td>3.31</td>
</tr>
<tr>
<td>Annual CO₂ savings from installed harder measures</td>
<td>520</td>
<td>58</td>
<td>0.49</td>
</tr>
<tr>
<td>Lifetime CO₂ savings from installed harder measures</td>
<td>16,542</td>
<td>1,838</td>
<td>15.50</td>
</tr>
<tr>
<td>Annual CO₂ savings (total)</td>
<td>2,958</td>
<td>329</td>
<td>0.79</td>
</tr>
<tr>
<td>Lifetime CO₂ savings (total)</td>
<td>43,451</td>
<td>4,828</td>
<td>18.81</td>
</tr>
</tbody>
</table>

NB: Average savings per home for the harder measures are based on each home where the measures have actually been installed (i.e. not an average from harder measures over all homes visited).

**Homes visited and referrals made**

A key target was to visit and install at least one measure in 8,000 – 10,000 homes. This was also successful with a total of 8,119 homes being visited. Over 82,500 easy measures were installed (>10 per home).

The numbers of referrals for harder measures was also quite high with 49% homes visited receiving a referral. 1,084 referrals were converted to referrals, representing a 26% conversion rate across all nine
boroughs. Individual conversion rates varied widely, ranging from 9% in Harrow to 44% in Camden. The average installation rate in terms of all homes visited was 13% and again there was variation within this. Hillingdon achieved the lowest installation rate of 2% of homes visited whilst Southwark achieved the highest at 31%.

The majority of referrals were for loft insulation (48%). Cavity wall insulation and draughtproofing followed at 17% and 11% respectively. Boiler upgrades and heating control upgrades accounted for 8% and 7% referrals respectively.

Two key penetration rates were captured and assessed: % homes visited in the target area and % homes visited out of those that were marketed to. The target was to visit and install at least one measure in 45% of homes in the target area but the average actual penetration rates achieved were:

- Homes visited out of target area: 21%
- Homes visited out of those receiving marketing: 24%

The highest penetration rate achieved was in Southwark where all homes in the area were marketed to and 35% of homes received a visit. However, Croydon, Kingston and Southwark all recorded penetration rates of 50-70% in particular streets.

**Spend breakdown**

Across the project as a whole, the average cost per home is £158. This includes service expenditure; management and reporting; purchase of the easy measures; and referrals to date. Broken down, the purchase of easy measures alone averages £61 and operations and marketing averages £97.

A key project objective was to increase the proportion of money levered into London for energy efficiency programmes. Inconsistencies in reporting between boroughs, combined with outstanding referrals, means that this has been difficult to quantify to date and, as installations complete, this data will be enhanced.

To date, reported leverage totals £907,306. This equates to an average of £100,812 per borough: 73% of the grant funding received. Boroughs with higher levels of leverage tended to achieve the best value for money (VFM) on easy measures, for example Camden, Havering, Southwark and Lewisham. Hillingdon was also noted for achieving high VFM, the primary reason for this being the economies of scale achieved by bulk-buying easy measures. VFM was also increased by careful selection of measures and achieving high numbers of home visits. The three boroughs with the lowest levels of leverage correspondingly achieved the lowest VFM with the lowest ranking borough also recording the highest unit costs of easy measures. This suggests that leveraging in funding has helped reduce the cost per home by subsidising easy measures.

Levered funding came from both public (78.5%) and private sector sources (21.5%). The key sources of public sector leverage were the boroughs themselves (55%) with the Targeted Funding Stream the next most significant. For private sector leverage, CERT contributions made up 58% and water utilities contributed 17%.

In terms of cost per tonne of CO₂, the average cost per annual tonne was £469.44, translating into an average lifetime cost per tonne of £31.96. At the bottom end of the range, the cost per lifetime tonne CO₂ is £16.49 which corresponds with the carbon prices energy suppliers currently offer.

**Economic impacts and energy cost savings**

Evidence suggests that a small number of employment and training opportunities arose from the demonstration projects and that demand for energy efficiency products increased. However, this was not significant enough to suggest that permanent employment resulted or that the demand could not be met by the existing supply chain. This was expected due to the size of the demonstration projects.

An obvious economic benefit is the annual energy cost saving to householders. This is estimated as an annual saving of £700,600 (~£6.7 million lifetime savings) across all homes treated. RE:NEW therefore impacts positively on the mitigation of fuel poverty as well.
This represents a saving of approximately £76 per household per year for easy measures alone and, for harder measures alone, a further £78 annual saving\(^3\). Therefore, a full package of easy measures and installed measures can save householders an average of £154 per year. One visit resulted in the residents saving approximately £1,000 per year from their fuel bills after the assessor showed them how to use their immersion heater more efficiently.

An Impact Evaluation Framework (IEF) evaluation of net economic benefits, taking into account the estimated value of emissions reductions, the total lifetime savings cost and grant funding allocated, gives RE:NEW a net economic benefit of £2.759million over the full lifetime of the measures. This equates to a benefit:cost ratio of 2.30:1 (£2.30 for every £1 spent).

**Social impacts**

Social outputs are difficult to quantify but are most accurately demonstrated in terms of referrals to income maximisation or other services: there were 241 income maximisation referrals and 830 referrals to other services across the whole programme i.e. 13% of residents visited by RE:NEW were referred to wider support services which may not otherwise have happened.

**Key successes of demonstration projects that should be replicated**

Croydon, Lewisham and Southwark are all good examples of projects that had consistently good results in key areas of £/home, £/tonne CO\(_2\) (lifetime); homes visited and penetration rates. This also resulted in them being the highest performers in terms of net economic benefits. The below chart shows a comparison of them against the average for the programme as a whole:

<table>
<thead>
<tr>
<th></th>
<th>Croydon</th>
<th>Lewisham</th>
<th>Southwark</th>
<th>Programme Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>£/home (easy measures &amp; ops/marketing)</td>
<td>£149</td>
<td>£113</td>
<td>£141</td>
<td>£159</td>
</tr>
<tr>
<td>£/tonne CO(_2) (easy measures &amp; ops/marketing)</td>
<td>£22.18</td>
<td>£16</td>
<td>£28</td>
<td>£32</td>
</tr>
<tr>
<td>Homes visited</td>
<td>832</td>
<td>1,102</td>
<td>897</td>
<td>812</td>
</tr>
<tr>
<td>Penetration of homes receiving marketing (%)</td>
<td>25%</td>
<td>20%</td>
<td>35%</td>
<td>24%</td>
</tr>
</tbody>
</table>

In the cases of Southwark and Croydon (which used the same managing agent) these results can be partly attributed to high installation rates helped by using the same software system for household data as for potential insulation schemes, allowing the database to easily select the best scheme for the client.

Lewisham was helped by the preparation that went into the development of the scheme including clear rationale for area selection, intelligence on insulation potential and a coherent approach towards energy related work in general. Early engagement with ward councillors who championed the project and promoted take-up within the community also likely played a role in achieving high numbers of referrals and conversions. This included using their Local Assembly meetings to establish the Assembly as a key stakeholder and to agree £9,205 to subsidise their loft insulation offer. They also used places of worship, local residents groups, community centres, schools and shops to promote the scheme and generate uptake.

Higher penetration rates generally correlated with operating in smaller, ward-sized, areas where momentum and recognition grew as a result of community awareness, brand presence and neighbourhood recommendations. This was undoubtedly also helped by these boroughs also having an established environmental profile in the area, suggesting that coordinated messages increase the receptiveness of residents to new schemes.

\(^3\) We expect savings from further measures will increase during the rollout by improving conversion rates where low numbers of installations were achieved. Reasons for low installation rates have been identified and RE:NEW is working with project partners to resolve these issues.
Efficiencies

Innovative and efficient systems implemented include the scannable data capture form used in the Kingston and Croydon projects. This took 5 days to set up but improved the efficiency of post visit administration, reducing the time taken to download information from the forms to a central database from 5 minutes per form to ~1 minute per form, saving ~60 man-hours over the course of each project.

Similarly, Hillingdon’s Green Doctors used an onsite laptop and printer so they could print and distribute the bespoke Home Energy Report to residents immediately, saving on administration time and postage costs.

Camden instigated a community hub network in the target area to make distribution and marketing easier and more effective. Some boroughs, such as Camden and Harrow, also employed a stock distribution manager to control and replenish stock and to ensure a steady supply of easy measures to the HEAs.

Booking visits

Unanimously, the most time and cost effective way of booking visits was through door knocking street by street (41% - 61%) and some roads visited in Croydon and Kingston achieved penetration rates of 50-60% from door knocking. The next most effective engagement methods were the initial mail-out (20-40%) and a leaflet drop (16-40%). This also ensures that referrals are concentrated in particular areas, allowing for negotiating lower installation costs.

Operating in confined areas also led to large numbers of bookings from referrals or recommendations. For example, Camden achieved 93 bookings through customer recommendations and Hillingdon made on-the-spot bookings when residents saw their neighbour having a visit.

Unintended benefits

For some projects, the benefit of the home visit extended beyond the scope of energy efficiency and benefits maximisation. For example, in Harrow, faulty wiring in the fuse box was seen and rectified when the HEA installed the wireless energy monitor, whilst in Lewisham a potentially dangerous gas leak was identified and dealt with when checking the loft for insulation.

Both cases demonstrate the wider benefits of RE:NEW and the importance of having the support of other council services to improve the safety and wellbeing of residents.

Key learnings identified

A number of learnings have come out of the demonstration projects but some of the most valuable in terms of process, efficiency and customer satisfaction are outlined below:

1. Lengthy procurement processes will impact negatively on the length of time available and, potentially, the quality of delivery. In Haringey, a 6 month procurement process left just 6 weeks for delivery, restricting time for marketing and engagement and ultimately the lowest number of homes visited at 527. Although the LDA has procured a framework to facilitate smoother procurement of the managing agent, this still illustrates the importance of streamlining borough procurement processes as early as possible so delays don’t occur.

2. Three boroughs (Camden, Havering and Lewisham) spent >£20,000 on establishing call-centres, although there is little evidence to suggest that these added any benefit to the programme when compared to other boroughs that achieved similar results without this expenditure.

3. One of the biggest learnings identified by all boroughs was improving the referral process to maximise the number of installations that happen as a result of the RE:NEW intervention. There are three strands to this: firstly, the ability of assessors to make correct referrals, secondly, simplifying the referral process and thirdly, better supply chain management. It is vital that assessors have the basic technical knowledge to be able to at least refer residents to further measures accurately; better still if they are further capable of carrying out eligibility checks and technical surveys to reduce the number of steps in the referral chain. Ideally, a booking will be made during the initial home visit. This is known to reduce the chances of residents dropping out with every additional contact point.
each appointment provides. Finally, ensuring a competent and joined up supply chain should ensure that installations are made no more than a couple of weeks after referral, further reducing the dropout rate - vital to the success of RE:NEW in achieving its carbon emissions reductions.

4. The Harrow project found that using ‘resident pledges’ on the tailored report was a potentially limiting and unnecessary element; a better solution may be to provide energy efficiency advice factsheets.

5. Both Camden and Hillingdon experienced difficulties in engaging with certain groups: Hillingdon found that uptake of houses of multiple occupation (HMOs) was limited due to the temporary nature of their residence, while Camden found that information was not always communicated from landlords to their tenants. These findings are broadly similar for all boroughs, so future activity needs to make better links with these groups so that RE:NEW is effective at reaching residents from all tenures.

6. A careful balance needs to be struck with marketing and engagement so as to maximise bookings without raising expectations amongst residents outside the target area. For example, in Harrow, borough-wide media resulted in customer interest from ineligible residents, whilst Havering recommend keeping marketing within the target area for the next phase. However, as RE:NEW gains momentum and new financing streams come online, this will cease to be an issue and instead reinforce the RE:NEW brand.

7. In some boroughs, technical issues were encountered with certain measures suggesting that a sample survey before commencing full-scale rollout may be beneficial. Alternatively, ongoing monitoring of measures and ability of managing agents to respond rapidly to problems should overcome this issue. Examples are radiator panels on uneven wall surfaces and standby devices being incorrectly calibrated to the remote control, inadvertently turning off neighbours’ appliances.

Gaps and areas requiring further work

The demonstration projects have been successful in refining the model following the technical trials but some areas require ongoing work:

1. An objective of RE:NEW is to generate a step change in the uptake of energy efficiency measures but the scale required to meet the Mayor’s targets has not yet been achieved through the demonstration projects – engagement methodologies, penetration rates and further measure uptake rates therefore need to be continually monitored and refined to generate the momentum required.

2. A further objective of the model is to lever in additional money to that which is already reaching London and to develop new financing schemes to further RE:NEW’s proliferation. It has been difficult to determine the extent to which this has been achieved due to inconsistent reporting on spend profiles between the boroughs – this needs to be rectified in the rollout by the LDA clarifying reporting requirements and boroughs maintaining better oversight on project reporting so that London is well able to quantify the return on investment to potential investors.

3. Due to a time lag in some boroughs between making referrals and completing installations, a significant numbers of referrals were lost. Refinements to the referral process to speed up converting them to installations have already been identified. These include training assessors to carry out technical assessments and eligibility checks at the same time as the home visit, thus removing two stages of the current referral process.

4. Whilst performance against value for money criteria is positive, improving uptake and installation rates will ensure the success of the programme by securing additional CO₂ savings through behavioural change and further measures.

Case study

Romford resident thanks energy-saving trial

“It was like Christmas, not only did we receive advice about saving energy but we also were given lots of goodies to help!”

“With the range of the various energy saving applications I am now fully up to date with all saving appliances. Very impressed with the help and information provided by your advisors.”

Romford resident thanks energy-saving trial
William Gurr was one of the first to benefit from the project and received a visit from Havering Council’s previous Cabinet Member for the Environment, Cllr Armstrong, to explain how local people were benefiting. Mr Gurr, 74, had radiator reflectors installed to keep heat in the room rather than escaping through the walls, a save-a-flush device to reduce the amount of water needed to flush the toilet, low energy lightbulbs, a stand-by switch to turn off appliances left on stand-by and an energy display showing how much energy appliances are using and how much they are costing to run. The assessor also looked for potential insulation and heating improvements but none were needed. Mr Gurr said, “I think this is an excellent scheme as I’ve always been interested in ways to save energy. The energy monitor is particularly useful as I can see exactly how much energy my appliances are using.” Cllr Armstrong said, “We all know we need to do our bit to cut our energy use but not everyone knows how to do this. These Home Energy Checks will show there are small ways to make a big difference. Simple measures like the energy monitors and radiator reflectors can help make our homes more energy efficient and I hope that residents in the ward will all benefit from this trial.”