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## HOME RESPONSE

### D30 LONDON EXPLOITATION UPDATE REPORT

This report details the status of the Home Response project as at the February 2022  
The report highlights the pipeline identified as part of a project consolidation review in July 2021  
and updates for developments since then.  
4 March 2022

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## 1. Executive Summary

This report (deliverable D30) sets out the future exploitation plan for Home Response (HR) learning and the potential follow-on projects or scale-up opportunities that have been identified at social housing locations in London.

### Opportunities

The key opportunities were found to be:

- Improve flexibility of electricity consumption and customer outcomes for electric hot water and heating through the wider adoption of smart controls alongside electricity tariffs such as E10 tariffs that offer the opportunity to charge hot water and heating in multiple windows across the day.
- Install correctly sized and optimised smart batteries in homes with PV panels. Well performing PV with the right smart battery can offer peak demand shifting and flexibility service provision while also lowering consumer bills.

The scale of the opportunity identified in July 2021 has been reviewed in detail with project partners and key stakeholders.

The specific opportunities identified in July 2021 were reviewed for ongoing relevance and progress with project partners involved in their development. There remains confidence that 1MW of flexibility potential can be developed in the near future from the immediate prospects listed below.

- **L&Q** are discussing the opportunity to further install Home Response controls including heating in one of their housing blocks identified in July where fabric refurbishment works are planned. This interest is based on the HR learning but funding for the energy upgrades has still to be confirmed. L&Q have agreed to retain the controls for a further 12 months to explore the benefits. This is considered a positive development from the position in July 2021.
- **Lewisham** are still progressing the upgrade works on the energy infrastructure at electrical heated blocks and continue to express intention to install smart controls.
- **Westminster** do not have a systematic programme but are continuing to upgrade controls in the blocks identified as the opportunity arises (see later in the report).

Wider opportunities to install HR like solutions were explored in two workshops:

- Potential opportunities through the five key GLA programmes, particularly Warmer Homes, Retrofit Accelerator-Homes and Local Energy Accelerator (LEA) and Solar Together, were identified and will be further explored:

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- Solar Together includes a battery offer but this may need to be developed to ensure that there is an offer that can support flexibility services.
  - Warmer Homes funding opportunities will be explored to identify where smarter controls could be included, possibly from GLA funding which is less restricted to fabric upgrades.
  - LEA has potential interest in solar installations in social housing, which if progressed could include batteries and smarter controls.
- Wider Housing Association and Local Authority programmes were explored in a second workshop.
    - The opportunities for smart controls will be progressed through ongoing engagement with the London Councils practitioners' group.
    - Waltham Forest have 1000 properties with solar panels and have expressed interest in the findings.

## Key Exploitation Challenges

### Funding

Most current funding programme are specifically designed to support fabric upgrades to improve energy efficiency and so do not support improvements to electric hot water and heating systems at the same time. Funding support favours larger programmes, which may make smaller programmes to install smart control more difficult to establish.

The familiar problem of split incentives - improved energy controls can produce better outcomes for tenants but no direct returns to landlords making the business case more challenging.

### Energy Tariffs and Markets

Atypical energy market conditions that persisted at the time of writing had resulted in electricity suppliers no longer offering tariffs to support customer switching to suitable tariffs. This appears set to persist for some time.

Home Response has clarified the need for tariffs that offer more opportunities to optimise demand across the day (for example three off-peak period E10 tariffs) and for ½hr settled tariffs to support battery optimisation and use in national grid support markets.

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## Recommendations

- The three main opportunities with L&Q, Lewisham and Westminster are pursued.
- The installation of smart controls for electric heating is considered for inclusion in wider retrofit programmes including Warmer Homes and Solar Together.
- Raise the awareness of the importance of suitable tariffs so that benefits of smart controls can be realised.

## 2. Background and Objectives

This report provides a summary of Home Response's post-project pipeline of future project opportunities. It highlights the opportunities and actions for the GLA to consider as part of the Home Response scale up objectives.

Home Response was undertaken in partnership with [Element Energy](#), [Moixa](#), [Repowering London](#), [UK Power Networks \(UKPN\)](#), London boroughs and Housing Associations. It is funded by in part by the [Department for Business, Energy and Industrial Strategy \(BEIS\)](#).

Home Response elected to focus on hot water rather than both heat and hot water as a risk mitigation in case the controls proved unreliable and because other projects were already looking at storage heaters. However, initial feedback in Home Response indicated that occupiers were more concerned about ineffective space heating than issues with hot water and strongly suggests that any future projects should include smart controls for both. Connected Response were engaged to provide hot water controls when it became clear the use of the smart metering communications system was not feasible.

This report (deliverable D30) sets out the future exploitation plan for HR learnings and the potential follow-on projects or scale-up opportunities that have been identified at social housing locations in London.

### 2.1. Approach

A detailed review of opportunities to exploit the learning from Home Response to develop demand side flexibility was undertaken as part of the project review in July 2021 (Deliverable D25). This deliverable provides a detailed updated review of the pipeline of opportunities identified in D25.

In this review we have considered the long-term potential based on nationally available data, the potential of current GLA programmes to support the wider adoption of smart heating controls as well as known near term direct opportunities to deploy the

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technology trialled in Home Response with social housing partners engaged by the project.

Home Response has identified a significant short-term opportunity to provide smarter hot water and heating for customers with electric storage heating and electrically heated hot water which, combined with ensuring customers are on the right tariff, can improve heat and hot water outcomes.

Two workshops were held to jointly review the key Home Response findings and review the exploitation opportunities. This approach was adopted to ensure that the key exploitation stakeholders had the latest findings to inform their views on how the Home Response learning could be taken forward.

Overall this detailed updated review has consisted of

- A review with the programme team members to identify the latest updated status of the opportunities identified at the mid period review (July 2021) (Section 4);
- A workshop was held with the five core GLA programme leads of the Energy for Londoner's projects, particularly Warmer Homes, Retrofit Accelerator-Homes and Local Energy Accelerator, and Solar Homes (see Section 3.4)
- Dialogue with the London Plan team to establish the scope for new build development (see Section 3.5)
- 30 Housing Associations and Local Authority leads were invited to a separate dissemination and opportunities workshop (section 3.6)

## 3. Pipeline assessment

### 3.1. Scale up Dependencies

Scale-up at the locations identified in the pipeline, and any new locations that might be added, depends on (i) installation costs being viable and (ii) suitable tariffs being available to tenants to enable the comfort and value benefits identified by the HR project.

Tariff availability

The programme has identified two E10 tariffs that could be available in London, via EDF and Utilita. The Octopus Agile Tariff may be suitable as part of a managed service as trialled for batteries, but this depends on future pricing and market conditions.

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The ability of tenants to switch is dependent on market conditions. During the second half of 2021 and the beginning of 2022 atypical energy market conditions did not support alternative tariffs for customers to switch to at competitive rates.

## Installation Costs

Scale up is dependent on developing programmes of work with landlords so that economies of scale and engagement issues can be addressed efficiently and consistently. The Insights Report discusses installation efficiency and household engagement issues in detail.

The future project pipeline therefore focused on locations that could enable programmes of work providing high-density installations (i.e. hundreds at a time via whole blocks), in some cases alongside other necessary maintenance or retrofit programmes.

## Technology Cost Benefit for Heat and Hot Water

The technology cost-benefit of retrofitted smart controls for existing electric heating or electric hot-water tanks looks appealing when considered against the costs of installing new heaters that are EcoDesign Lot20 (2012 Energy Efficiency Directive (EED 2015/1188) compliant. No programmes were identified where these heaters were being rolled out at scale.

### 3.2. PV and Battery opportunity

Data from the Central Feed-in-Tariff Register<sup>1</sup> indicates that as at the end of 2019 there were 24,000 domestic PV installations in the London area that could be suitable for the addition of battery storage. It has not been possible as part of this consolidation exercise to assess what proportion are in private or social housing, or in the GLA area.

Waltham Forest who participated in the trials have around 1000 PV equipped homes.

The GLA Solar Together programme has been offering a battery option. However, investigations for this report indicate that the current battery offer differs technically (it appears to be connected directly with the solar panels) from the requirements identified in Home Response (separate battery and PV installations) and we have not been able to determine if these batteries are capable of grid services.

The Home Response analysis indicates that optimising self-consumption provides cost benefits for tenants, but these are marginal unless the tenant can switch to an export tariff.

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/861819/December\\_2019\\_Sub-regional\\_Feed-in\\_Tariffs\\_confirmed\\_CFR.xls](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/861819/December_2019_Sub-regional_Feed-in_Tariffs_confirmed_CFR.xls)



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## 3.3. Hot Water (and heating) Opportunity

The National Energy Efficiency Data-Framework (NEED) data for 2019 identifies 667,000 properties in London without gas supplied ie all electric heat and hot water, of which 630,000 are flats. The NEED data indicates that c150,000 of the flats are on Economy 7 (E7) off peak tariffs with 480,000 on some form of standard tariff. Standard tariffs for electric-only homes are not usually cost optimal.

Whilst not all would be social housing, and some may have communal heating, this gives some indication of the potential scale of the electric heating control opportunity with the right support through retrofit of smart controls and flexibility enablement.

## 3.4. GLA Programmes

### Solar Together

Phase 4 has included 200 retrofit batteries. Some agreed requirements specifications are needed to allow procurement in future rounds to ensure they are capable of grid services as the business case develops (as discussed in the Insights Report).

### Retrofit Accelerator – Homes

The next phase of Retrofit Accelerator – Homes is being developed during 2022 and the findings from Home Response will be considered for future phases i.e. the inclusion of existing properties with electric heating and the addition of smart controls.

The current phase retrofitted 1400 homes.

### Warmer Homes

Warmer Homes is a grant programme that could influence the take up of smart controls for heating and hot-water in private rented homes. The NEED data suggests there are many all electric residences in the private sector. It may be possible for core GLA funding to be used to support smart controls for existing electric heating (central funding is for fabric and heat pumps). Further engagement with Warmer Homes is needed on incremental costs of smart control equipment and the core business case (improving comfort and value for money for the householder).

### Local Energy Accelerator (LEA)

LEA is interested in the potential for batteries and solar as part of social housing projects. This will be followed up by Repowering as they have relevant experience of such projects. Equipped with appropriate controls these can provide local energy flexibility.

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## 3.5. London Plan

The current London Plan has a ten year target for 522,870 new homes (London Plan Table 4.1) between 2019/20 and 2028/29 of which small size sites represent 119,000 homes.

If smart energy controls were implemented in building standards from 2025 as a minimum this could lead to between a further 40,000 to 150,000 new properties (up to 30% of the above) able to contribute to energy flexibility in the city. We note that where heat networks are planned these should also be required to incorporate smart flexible heat and hot water.

## 3.6. Local Authority and Housing Association Engagement

Waltham Forest (where the 23 Home Response batteries are installed) identified that there were 1000 homes equipped with PV should the market conditions become favourable for batteries to be more widely applicable. At the time of the workshop the detailed modelling was ongoing and further engagement is planned as part of the dissemination of detailed findings. This is another opportunity to progress in conjunction with the Solar Together programme.

Lewisham confirmed they had an ongoing need to upgrade heating timer-switch technology as part of their ongoing programme as identified in July 2021. It was noted that this work best fits alongside other programmes with a significant amount of electrical works.

Most housing refurbishment programmes are presently focused on whole home fabric upgrades, with a hierarchy of energy sources, with electrification a priority but not always possible. Funding limitations exist: retrofit expenditure does not produce new rental income and maintaining social rents is leading to revenue gaps with necessary safety expenditure and retrofit work. It was noted that supporting funds are looking for large projects. This finding supports upgrading home energy systems as an integrated part of larger projects.

It was identified that further engagement should be maintained through the London Council's practitioners' group and this was the best way to disseminate the Home Response findings.

## 4. Mid period review Opportunity Assessment

The interviews and mid period review workshop (June 2021) identified the following hot water and space heating opportunities to be included in the pipeline assessment:

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Landlord	Status
<b>L&amp;Q</b>	Existing Home Response partner
<b>Waltham Forest</b>	Existing Home Response partner
<b>Westminster Council</b>	Connected Response Client
<b>Lewisham Borough Council</b>	Connected Response Prospect
<b>Royal Borough of Kensington and Chelsea (RBKC)</b>	Connected Response Client
<b>Barking and Dagenham</b>	Connected Response Prospect
<b>Newham Borough Council</b>	Connected Response Prospect

These were reviewed again with the partners in February 2022 to ascertain their ongoing validity. The table below summarised the potential of each opportunity:

Landlord	Potential
<b>L&amp;Q (project partner)</b>	20 locations with equipment already installed. One block identified with c 160 customers but only 5 Home Response installs. Known to have refurbishment plans. L&Q have confirmed their intention to retain the smart hot water switches for at least another year, to help inform wider potential roll out.
<b>Waltham Forest (project partner)</b>	550 customers in towers but status uncertain awaiting decision on regeneration. No Home Response hot water controls installed in Waltham Forest.
<b>Westminster Council</b>	800 switches purchased with 230 installed. Tenants have (working with EDF) landlord as energy supplier
<b>Lewisham Borough Council</b>	Approx. 500 properties in 11 blocks with landlord as energy supplier (working with EDF)  Lewisham are still progressing the business case as meter upgrades and electrical remedial works on the properties are needed (confirmed Feb 2022)

Landlord	Potential
<b>Royal Borough of Kensington and Chelsea (RBKC)</b>	Existing Connected Response Customer in Trellick Tower – adjacent block with 70 properties but no known intention to progress – Home Response water controls could be installed in Trellick Tower
<b>Barking and Dagenham</b>	Volume tower block opportunity Identified through another project (up to 1500 properties) but more immediate opportunity on a sheltered housing block (35). Beyond end of project but potential in 2022.
<b>Newham Borough Council</b>	Block of 126 homes identified in UKPN flex zone in earlier project phase. Beyond end of project but potential in 2022.

Further data about these locations was collected in the first workshop and was analysed and summarised in the table in Appendix 1.

The three opportunities considered most immediately feasible are discussed in more detail below:

#### 4.1. L&Q

L&Q are an existing project partner whose tenants represent the majority of the clients for hot water controls already installed under Home Response. The agreement with L&Q was that they would actively support a tenant opt-in arrangement. Tenants pay their own energy bills, typically paying for most space heating and hot water energy on the off-peak E7 tariff (unless they use supplementary heaters in the peak time zone).

Up to 1200 potentially suitable L&Q residences were identified as part of the longer term Home Response pipeline.

There are now Home Response installations in 20 L&Q buildings. Most blocks are small having less than 20 dwellings. One significant block has 160 dwellings of which 5 so far are Home Response participants. This block has been identified as a potential expansion target as L&Q has a potential refurbishment plan but this would need to be extended to include heating systems as well as fabric. L&Q have confirmed their intention to retain the smart hot water switches for at least another year, to help inform wider potential roll out.

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## 4.2. Lewisham

Lewisham is known to have 11 electrically heated housing blocks with 500 dwellings whose heating and hot water are managed by legacy time of day controls. Lewisham is believed to operate a landlord electricity supply arrangement, although demand is not aggregated half hourly. Meters are read manually and then consolidated into a single bill from supplier to landlord.

It is known that Lewisham residents suffered significant heating issues throughout the 2020 winter and that Lewisham are looking for an alternative heating solution. Connected Response are engaged with Lewisham independently of the Home Response project having provided solutions in the Royal Borough of Kensington and Chelsea and in Westminster to solve similar problems and which involve the same metering agent used by Lewisham.

The opportunity remains to use the remaining Connected Response controllers that have already been funded by Home Response to equip one of the Lewisham Towers as part of their upgrade programme to address existing heating control issues.

The Lewisham estate represents a good pipeline project and has potential for creating enduring value for tenants and landlord. Connected Response have confirmed with Lewisham that a similar landlord-tenant energy supply arrangement to those established in RBKC and Westminster may be possible. Several blocks have been surveyed during July to confirm their suitability for participation in Home Response.

## 4.3. Westminster

Westminster Borough Council is an existing Connected Response customer with a close working relationship established. Westminster has an ongoing programme to install up to 800 Connected Response controllers, with 230 already installed. Westminster operates a landlord energy supply arrangement. The landlord's collective electricity demand is understood to be on a half hourly commercial tariff (and thus could be used for grid services such as the Balancing Market), representing a potential opportunity for Home Response to demonstrate the additional technical capability of domestic heat and hot water demand to access grid system services.

The solution applied to the 230 currently equipped properties uses 3 off-peak time zones to charge storage heaters and hot water tanks. The CR smart controls were added to manage the discharge times of the storage heaters to improve tenant comfort (and avoid running out of heat before the end of the day) and avoid tenant use of supplementary peak-time space heating. User feedback and Connected Response case studies are evidence that this joint objective is achieved (better space heating at lower power costs). Hot water charging is split over three time slots each day, based on a simple approach rather than being fine-tuned for each resident or to meet grid needs

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based on temperature monitoring. The charging regime (and thus power demand) can be easily flexed with the existing CR equipment installed.

The medium-term opportunity is to enable all 800 premises to benefit from the improved flexibility of Connected Response space heat and hot water controls. Upgrades are being delivered on an ad-hoc approach at present with other maintenance / repair interventions.

## 5. Conclusions

The pipeline opportunity workshops identified a clear near-term opportunity to scale-up to over 3000 properties. Home Response assessments indicate average of 1kW turn-down or 2kW of turn-up flexibility. This would represent up to 3MW of potential flexibility using the assessed average flexibility of 1kW per property.

We estimate this could translate to 1MW of demand side flexibility across 7 RSLs (6 local authority and one private registered provider) conservatively assuming only 1/3<sup>rd</sup> (1000) residences) have 1kW on average available to flex at any given time.

The project has assessed that 600MW of potential flexibility may exist across all the existing electrically heated housing stock. This demonstrates the significant potential for London to contribute to demand flexibility.

Wider approaches to other London Borough's through London Councils working groups and programmes such as Warmer Homes and engagement with the G15 group should allow programmes to be developed over time to address more of the 600,000 electrically heated homes in the capital.

The project experience demonstrates the efficiencies of promoting scale adoption driven by landlords is essential for cost effective retrofit of smart controls compared to incremental uptake by individual tenants.

The project has shown that current E7 off-peak tariff periods limit hot water charging windows and have the potential to diminish customer outcomes (cost and value for money

Alternative tariff structures (such as E10) would allow:

- far more practical enduring peak demand management particularly when combined with timing flexibility to charge electric space heaters and avoid use of costly supplementary heating at system peaks; and
- delivery of better customer heat and hot water outcomes and reduce or eliminate the need for expensive supplementary energy consumption at or near peak times.

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Half hourly tariffs like Octopus Agile may also provide customers savings and are inherently more flexible but may be more difficult for many end users to understand. A range of suitable tariffs that support greater flexibility are needed to suit different customer needs.

## 5.1. Identified pipeline (Post project, subject to viability and resource)

The project has identified over 3200 residences that could benefit from energy flexibility. This consists of 800 residences (already committed to Connected Response smarter space heating controls) in Westminster, 1200 L&Q properties identified through the programme, 500 high potential properties in Lewisham, as well as 126 in Newham, 550 in Waltham Forest and a further 70 in RBKC.

The analysis of data from Home Response has indicated an average of 1kW turn-down or 2kW of turn-up flexibility from hot water, giving on average c1kW flexibility per property. The 1MW flexibility target anticipated would therefore require smart controls in 1000 residences.

Lewisham represents the most significant and likely achievable near-term opportunity to support rapid deployment that both delivers flexibility during the project and achieves better end user outcomes on an enduring basis. Lewisham has 500 dwellings that could relatively easily be equipped with smart heat and hot water controls that overall would be expected to deliver c.1MW of flexibility potential, assuming heat offers similar profiles to hot water.

The HR project has 50 control switches purchased but uninstalled that have been offered to Lewisham for use in their upgrade programme.

The other immediate scale-up opportunity is Westminster. The ongoing Westminster programme will deliver over time as it is currently delivering the smart control upgrades as other programmed maintenance / repair interventions are completed.

## 5.2. GLA Energy for Londoners Programmes

The GLA Programmes have the potential to introduce the HR solution into more projects that could deliver up to 1MW per annum of new flexible demand. Scaling up becomes easier as the right conditions emerge, i.e. tariff availability, lower installation costs through volume projects, specification to available standards to facilitate procurement and inclusion of smart controls as a fundable element of any project involving electrically heated homes.

The project recommends that developing smart controls requirements should be explored as part of the specification for all electrical heating systems including heat pumps.

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## 5.3. London Plan

Including smart controls in all ‘new buildings’ as part of the electrical heating energy standards could drive c 10MW (10,000 home per annum) per annum of flexible load from 2025 onwards given the homebuilding volumes envisaged in the London Plan.

## 5.4. Potential follow up actions and timescales

The following actions have been identified to ensure the opportunities identified through Home Response are embedded in GLA programmes:

Action	Who	Timescale
<b>Pipeline / Scale Up</b>		
Engage with Warmer Homes and Retrofit Accelerator – Homes on developing packages to support improvements in electrically heated homes that enable smart control and adoption of multi-period off peak tariffs.	GLA	2022
Work with Solar Together to explore opportunity for future rounds to include battery options that are compatible with grid services	GLA	2022
Explore support opportunity with Lewisham Homes to make use of remaining 50 controllers that are were procured as part of Home Response	GLA / Connected Response	2022
Identify standard for inclusion in all future GLA and Local Authority electrical heating programmes	GLA, Moixa, Connected Response	2022
<b>Explore the potential for E10 or equivalent tariffs with London Power /Octopus Energy in their offer to Londoners</b>	GLA	2022



## 6. Appendix 1 Pipeline assessment Matrix

Criteria		Westminster	Lewisham	L&Q	Newham	Waltham Forest
<b>Engagement</b>	Landlord engaged - Project	CR Engaged with landlord	CR Engaged with landlord	y	n	y
Success factors for engagement	Landlord engaged - energy	y	y	Limited – opt in agreed	unknown	unknown
	Landlord driver to invest	y	y	None at present	unknown	n
<b>Energy</b>	half hour settlement possible	y	unknown	n	unknown	n
Opportunity to generate data for HR	non E7 Tariff	y	possible	n	unknown	n
	E7 Tariff	Heat with Rent	Heat with Rent	y	y	y
	UKPN Flex Zone	n	n	n	y	n
<b>Size</b>	total	900	500	1200 (20 blocks)	126	550
	block size >50	y	50-60	160 - Grampian House	126	y
	block size <50			most c20?		
<b>Installs</b>						
Ability to install	existing gateway	y	n	y	n	n
	2021 delivery	not needed? 230 installed	60	70	n	n
	2022 delivery	900	500	90	126	500
Cost of install	Cost within HR programme	tbc – Temp sensor only	1 block c£15-20,000	Up to £35,000	n/a	n/a
Customer Acquisition	Cost to acquire additional resources for HR project	£1000 for 20 clients	No - landlord lead	£3500 - existing rate	n/a	n/a

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The criteria used for the assessment were:

**Landlord Engagement:** the HR project has learnt that without significant landlord support the potential to deliver significant volumes through individual tenant opt-in is limited and the cost / effort to acquire customers is high. This favours working with landlords who are engaged in tenant energy (either through heat-with-rent arrangements or landlord energy supply/resale) or landlords who are planning standard upgrades to metering, controls or heating systems at a housing block or estate.

**Scale & Clustering:** the HR project aimed to identify up to 1MW of potential flexibility in a prioritised pipeline. It would be reasonable to assume that each property has the potential for 3kW of hot water flexibility based on the rating of immersion heaters, although the insights report will investigate this further. Projects were assessed as to their ability to contribute significantly to this aim. Existing learning has identified that installation costs are significantly reduced through clustering so potential scale of clustering was included in the assessment.

**Energy:** the potential for further insight on accessible energy value is expected to be higher where customers can be part of a block of load that is available to Moixa's VLP to sell into one of the system flexibility markets (most likely the Balancing Market).

The potential for passing back the greatest value to the paying consumer would be achieved where the paying consumer could have access to or is already buying on a half hourly settled tariff; this is typically the case on Landlord paid tariffs (which are commercial tariffs). The landlord can decide how to pass or share value across their tenants. Consumers paying for their own energy through an E7 tariff or similar would need to be able to switch to an E10 type or ToU tariff supplier to significantly benefit from the Connected Response equipment.

The assessment therefore also considered which opportunities would allow tenants or landlords to access ongoing value if the equipment was left installed. And which could provide additional flexibility insights (and potentially pass back DSR value) if linked to Moixa's paid VLP services during or after the project.

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**Installation:** the opportunities were assessed for their ease of adding new or additional installs at dwellings, including access to an existing Connected Response gateway. Also, for the amount (and cost) of kit that would need to be installed for each dwelling. These factors influence the volumes that can still be achieved in 2021 and 2022. For example, the installations at Connected Response's existing projects with social landlords, only need a retrofit temperature sensor to add HW control (to the existing heating control) , where-as installations at existing Home Response sites need one of the, already paid for, CR controls to be installed and connected to both the storage heater and the hot water tank (which requires more work).