



Department
of Energy &
Climate Change

Evaluation of the Renewable Heat Premium Payment Scheme Phase Two

Executive Summary

January 2015

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This report summarises findings from an independent evaluation of Phase Two of the Renewable Heat Premium Payment Scheme (RHPP2), commissioned from ICF Consulting by the Department of Energy & Climate Change (DECC). The evaluation provides an independent assessment of the Scheme's delivery, which ran from April 2012 to March 2013, across the three mechanisms used to reach households.

The evaluation examines the extent to which the Scheme met its objectives and the lessons that can be learnt to inform further development of the Renewable Heat Incentive (RHI). The RHPP2 Scheme was extended in April 2013 until the launch of the domestic Renewable Heat Incentive (RHI) on 9 April 2014. The scope of the evaluation and this report was restricted to the second phase of the RHPP Scheme. A separate, small scale evaluation of Phase One was undertaken and can be found on the GOV.UK website

<https://www.gov.uk/government/publications/analysis-of-customer-data-from-phase-one-of-the-renewable-heat-premium-payments-rhpp-scheme>

Research methodology

The study employed a mixed method approach including:

- a census of installations undertaken with social tenants and owner occupiers in the private householder and communities scheme (scheme participants). Census responses ranged from 222 to 4,136 households depending on the population;
- interviews (a total of 168) with owner occupiers, tenants, social landlords, community group leads and installers of renewable heating technologies (scheme participants); and
- interviews (a total of 51) with owner-occupiers, Registered Social Landlords (social landlords) and community group leads who applied to, but did not install renewable heating technologies as part of the RHPP2 Scheme (non-participants).

The findings and conclusions in this report are drawn from the above quantitative and qualitative evidence.

The main report contains more detailed findings and a separate technical report provides details of the research methodology, sample and data analysis. They can be found on the GOV.UK website: <https://www.gov.uk/government/publications/evaluation-of-the-renewable-heat-premium-payment-scheme-phase-two>

Policy background

The Renewable Heat Premium Payment (RHPP) was a government scheme that provided a grant towards the capital cost of installing renewable heating technologies in domestic properties. The summary features of the Scheme are:

- The eligible technologies included air and ground source heat pumps, biomass boilers, and solar thermal panels;
- The Scheme was available to those living in Great Britain;

- For the householder element of the Scheme, any householder could apply for solar thermal, but only people living in areas off the national gas grid were eligible to apply for heat pumps and biomass boilers. The off-gas grid eligibility criterion did not apply for the social landlord and communities elements of the Scheme, although it was used as a criterion when rating applications for funding;
- The Scheme operated in three phases: Phase One (August 2011 – March 2012), Phase Two (April 2012 – March 2013) and RHPP2 Extension (April 2013 – March 2014);and
- The Scheme was funded by the Department of Energy & Climate Change (DECC) and was administered by the Energy Savings Trust.

The RHPP2 Scheme (April 2012- March 2013) was comprised of three elements:

- one-off grants, paid through vouchers issued to householders to help with the cost of installing renewable heating technologies, and redeemed upon certified completion;
- competitions for social landlords to bid for grants to cover some of the costs of installing renewable heat technologies in social housing; and
- a new Communities Scheme to install renewable heating technologies in private homes, facilitated by community groups.

The RHPP Phase Two Scheme was directed to:

- help support the renewable heat industry in the period before the domestic Renewable Heat Incentive could be introduced; and to
- learn about the performance and use of domestic renewable heat installations.

We consider the achievement of these two objectives below.

Supporting the renewable heat industry through the take-up of the RHPP (Phases One and Two)¹

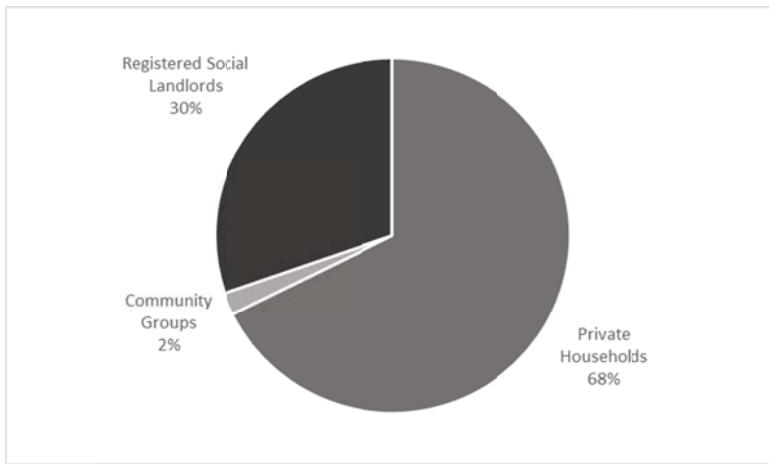
The Scheme part funded over 15,500² installations

Across all phases of the Scheme (but excluding the RHPP2 Extension phase) and all customer groups, 15,634 installations received grant assistance under the RHPP Scheme. Of these, 70 per cent were installed by private households (including households in the Communities Scheme) and 30 per cent in social housing. Installations of heat pumps accounted for 59 per cent, solar thermal for 29 per cent and biomass boilers for 12 per cent of all renewable heat installations.

¹ Figures presented exclude the RHPP2 extension scheme as the data was not available at the time of producing this report. The final full RHPP data (covering the RHPP1, RHPP2 and RHPP2 extension schemes) can be found here: <https://www.gov.uk/government/statistics/rhi-and-rhpp-deployment-data-november-2014>. A special feature on the RHPP can also be found in the December 2014 edition of Energy Trends <https://www.gov.uk/government/statistics/energy-trends-december-2014>

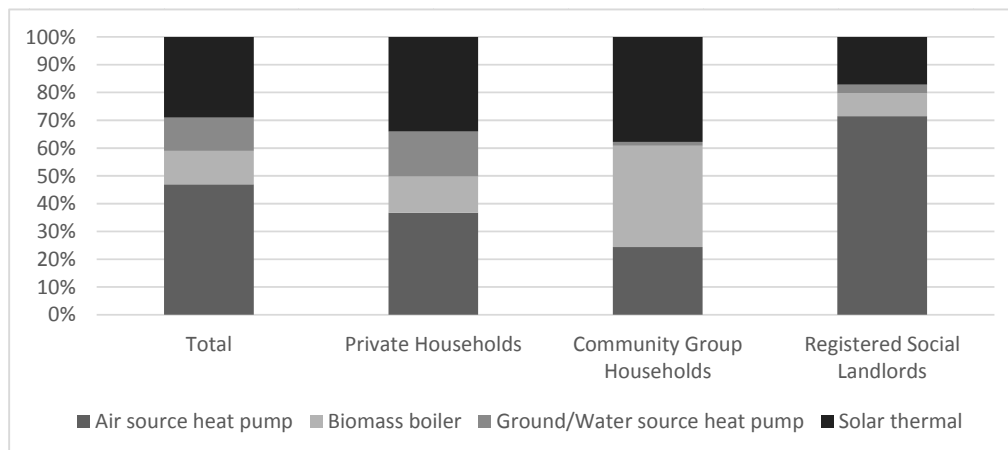
² Available at: <https://www.gov.uk/government/statistics/rhi-and-rhpp-deployment-data-august-2014>

Installations of renewable heat technologies by customer group, funded by the Renewable Heat Premium Payment Scheme, Phases One and Two combined



Source: DECC published data, August 2014. Excludes Phase Two Extension.

Installations of renewable heat technologies by customer group and renewable heat technology, funded by the Renewable Heat Premium Payment Scheme, Phases 1 and 2 combined



Source: DECC published data, August 2014. Excludes Phase Two Extension.

The RHPP Scheme sat within a wider market including other retrofit renewable heat installations, new build and small non-domestic installations. It was designed to target a section of this market: off gas grid retrofit. The RHPP Scheme (across all phases) required installations to be registered with the Micro-generation Certification Scheme (MCS), a scheme which certifies microgeneration technologies and installation companies. Looking at the number of RHPP installations as a proportion of the total MCS registered installations provides an indication of the penetration of the scheme in the market. During Phases One and Two of the RHPP Scheme 49 per cent of registered installations with MCS were installed under the RHPP

Scheme. The proportion was highest for biomass boilers (78 per cent) and lowest for solar thermal (40 per cent).

Installation in Phase Two accounted for 60 per cent of all installations in the two phases

Phase Two was implemented between April 2012 and March 2013. In this period, some 9,500 installations (60 per cent of total installations in the two phases) were undertaken. The share of different technologies taken-up was broadly similar to Phase One.

However, for 78 per cent of renewable heating technologies installed as part of the private householder scheme, users reported that it was likely or very likely that they would have done so in the absence of the RHPP2 Scheme. Eighty-seven per cent of private households had heard about the RHI and it is possible that some may have proceeded with their installation in anticipation of the RHI. The number of installations that would have gone ahead without the RHPP Scheme was reported to be lower for the Communities Scheme, with only 43 per cent of installations deemed likely.

In Phase Two, engagement with social landlords and community groups facilitated take-up in new markets and areas

The RHPP2 Scheme has supported the market for renewable heat technologies by encouraging the participation of households that would not have otherwise benefited from the Scheme, especially through the Registered Social Landlords competition, but also to a lesser degree the Communities Scheme.

Social landlords used the Scheme to develop and test both the suitability of the technologies and their own capacities to implement installation programmes.

There is no quantitative data on the extent to which the installations funded by the Registered Social Landlord competition would have been likely to have been made in the absence of the Scheme. But interviews with a sample of social landlords that participated in the RHPP2 Scheme highlighted the benefits of the Scheme:

Some social landlords interviewed stated that the grants available through the Scheme provided an incentive to consider technologies alternative to those conventionally used, and to identify ways in which investment in renewable heat technologies could involve the integration of these considerations into their building investment and maintenance programmes and budget planning cycles: '[Installation of renewable heat technologies was a] *useful complement to our own investment programmes in insulation.*' (Participating RSL 8); '*We were planning to upgrade our off-gas portfolio anyway...so this scheme appealed*' (Participating Registered Social Landlord 15).

Some social landlords indicated in interviews that participation in the RHPP2 Scheme resulted in their organisation acquiring greater knowledge and understanding of renewable heating technologies, and it enabled the testing and piloting of the use of renewable technologies: '*The rationale for participation in this project was to install a range of renewable techs, singly and in combination, so we can do some meaningful comparisons between technologies...We wanted some decent data to inform future investment in this area.*' (Participating RSL 29); '*We learnt*

about the practical realities of installing [the technology] through this scheme – so that is a useful outcome in itself (Participating Registered Social Landlord 14).

Social landlords that participated in Phase One of the Scheme explained in interviews that their previous experience of the application and installation process helped them submit applications to install more renewable heat installations: *'We had the experience of RHPP1 and the programme for replacing heating in ... off-grid homes so we were always going to go for any other sources of grant funding.'* (Participating Registered Social Landlord 28); *'Communication [with tenants] was easier this time [for RHPP2], after having the experience of RHPP1... [For RHPP1] we didn't know what the experience and the running costs would be like. We did some careful monitoring [of RHPP1 installations] so we were able [for RHPP2] to give better information to customers on running costs... We had better uptake [because of] fewer tenant refusals'* (Participating Registered Social Landlord 17).

Most social landlords interviewed who had achieved installations stated that these had a positive impact on the majority of their tenants, in terms of satisfaction with the performance of the renewable heating technology and perceived lower energy costs, justifying investment in renewable heating technologies: *'[Participating in the Scheme] shows that we are a caring landlord addressing fuel poverty by giving [tenants] the choice of what to have installed'* (Participating Registered Social Landlord 24). *"A satisfied tenant in a properly heated home leads to lower maintenance costs for us from associated problems such as damp and condensation... that is an additional benefit for us"* (Participating Registered Social Landlord 6).

During interviews, social landlord, in particular smaller ones, identified management constraints which limited their take-up and number of installations achieved. These issues include the need for:

- housing stock assessments (numbers of units, condition of heating systems, insulation levels);
- recognition of potential planning issues;
- technology and supplier information;
- the operation of a procurement process to select an installer;
- tenant engagement processes before, during and after an installation;
- management of installation projects using government schemes, including the use of reserve lists of projects/ buildings; and
- flexibility in housing capital and revenue expenditure plans to take better advantage of government schemes.

Community groups engaged communities and promoted take-up, but struggled to achieve targeted levels of installation.

Community groups consisted of existing groups, broadly focused upon community action to promote renewable energy in order to reduce the environmental impact of fossil fuels and

reduce the energy bills of low income households. Most had experience of similar, previous schemes. Even where the group had no experience of promoting renewable heat technology, all had experience of promoting environmental sustainability at the community level:

'[Participation in the Communities Scheme] was a desire to somehow kick-start renewable heat in this area, and make a bit of noise about it' (Town-based group, Community Group 1).

All of the Community Group Leads³ welcomed the funding and support provided to develop their projects. In developing and delivering projects, they reported difficulties in securing sufficient households from target areas. Every household was not required to be in these areas, but a greater number would result in a higher grant score and higher voucher values. Face-to-face contact was reported as being effective in engaging local households. It enabled the community group members to talk about the Scheme and the technologies as a trusted source of advice and to answer householders' questions. As well as house-to-house door-knocking, events to promote the Scheme that included local installers demonstrating technologies, were also important to a community-based approach. *"It's a big thing around here about local businesses. People prefer to work with people from down the road."* (Village-area group, CG7).

The majority of Leads identified the timing of the Communities Scheme as providing a challenging framework for engaging households and achieving installations. Households were required to make decisions about installations before and after Christmas and this was a barrier to securing financial commitments amongst the middle to low income households targeted: *'To take people from ground zero to having an installation in place that would entail considerable disruption in terms of what that installation would do to their house, and ask them for an upfront payment, all by the end of March, that was asking way, way too much'* (Rural villages group, Community Group 18).

The key barrier to converting expressions of interest into installations reported by Community Group Leads was the cost of installing renewable heat technology that remained after the voucher value had been discounted. Almost all of the community groups expected the vouchers to provide a higher value discount than what was awarded: *'Initially we thought that the voucher would cover 50 per cent of the cost – in the end it was more like 30 per cent'* (Large mixed urban and rural area, No Installations Community Group 2).

Community groups that were more successful in reaching planned targets had a number of shared features:

- effective partnership working with installers: established from the earliest stages of the Scheme and sustained throughout;
- networking with other community groups: to learn from each other and to promote the Scheme through networks and, for those covering large areas, to work with those more local to specific communities;
- having a well-developed infrastructure and paid staff: full-time staff working with volunteers and with experience of delivering community projects; and

³ Community Group Lead was the person in each of the community groups responsible for the delivery of the local project under the Communities Scheme

- having a well-developed project plan: with realistic targets and experienced staff able to react quickly to work with installers and other groups.

Learning about the demand, performance and supply of domestic renewable heating systems

Customer awareness and interest in renewable heat technologies was high.

Interviews with private households showed that many were already researching and investigating the possibility of investing in renewable heat technologies, and engaging with installers and manufacturers to establish the range and feasibility of using different renewable heat technologies, prior to the Scheme, encouraged in part by the promise of the Renewable Heat Incentive (RHI). More than half of the interviewees reported that they had been informed about the Scheme through their installer. This was at the time of visiting an installer's showroom or having a visit for an assessment or quote: *'They came out and did an assessment. That was when we heard about the grant'* (biomass boiler).

Installers had also promoted the RHI as an incentive for participants: *'The main guy who sold us the system said, by the way, the installation qualifies you for renewable heat premium payments. I was like, oh wow what does that mean? He said you get a voucher, first of all you get about £800 back and then over about seven years you get extra money'* (ASHP).

The planned introduction of the RHI and the scope for future cost savings was an incentive considered to be important, although at the time of application there was some uncertainty over if and when the RHI would begin. The RHI was well known to households (87 per cent of those installing under the Private Householder Scheme had heard of the RHI) and was identified as a factor in the decision to install a renewable heat technology by almost half of the sample overall.

Consumers were motivated by the scope to reduce reliance on fossil fuels and cost savings

Across all customer groups and technologies, the most frequently indicated reason given for installations was the need to reduce dependence on fossil fuels (77 per cent of all installations). This was especially important for community scheme households and for installations of ground source heat pumps and biomass boilers. The rising price of fossil fuels was also a very important motivation, and the most important for private households (78 per cent of installations) and installations of biomass boilers (83 per cent of installations).

The desire to save money was the second most frequently indicated motivation for all three customer groups (70 per cent of all installations). This was the main motivation for social tenants, (74 per cent of installations), who identified this as a key motivation to agreeing to the installation. This was only a slightly weaker motivation for private households (69 per cent of installations) and community group households (68 per cent of installations). It was relatively more important for installations of solar thermal (75 per cent of installations).

Installations in social tenant properties were more likely than other customer groups to have taken place because they were thought to be more efficient than the previous heating system

(55 per cent of installations). This was followed by practical reasons such as constant temperature (50 per cent), easier to use (48 per cent), and a reliable supply (47 per cent).

Consumer satisfaction with installed renewable heat technologies was high

Satisfaction levels with installations, across all technologies, for all three customer groups, was high at 88 per cent. Overall satisfaction levels with installations was 92 per cent, reported in the private household census⁴. Similar satisfaction levels with installations (92 per cent) were reported in the census of households in the Communities Scheme⁵. There was no significant association found between the overall level of satisfaction reported by private householders and Communities Scheme householders and the technology installed.

The census of social tenants indicated that 74 per cent of users of renewable heat installations were generally positive about their installation⁶. The overall satisfaction levels among tenants were the highest among users of biomass boilers and ground source heat pumps. *“It works brilliantly. It keeps the house warm at the right temperature.”* (Tenant 5); *“I can actually run a shower off the hot tap now, whereas before it was like a little trickle, and it would take all week to fill up the bath... It’s so nice to have a warm house”* (Tenant 10).

It is too early to establish the extent of cost savings and changes in the use of heating and hot water systems

While it is evident that across all three customer groups, 74 per cent of installations were hoping to achieve cost savings in the long-term, census data from users of renewable heating technologies highlighted that there is currently no reliable data available to measure cost savings. Generally, there is increased use of the new heating systems reported by all customer groups, with almost half of all installations reported to be used for longer periods in comparison to the previous heating system. What is not clear from the data is why this is and whether this is occurring because users find their system more or less cost effective to run for longer periods and/or because it is simpler to operate.

Two-thirds of installers interviewed were positive about the impact of the RHPP2 Scheme in generating demand for renewable heating technologies

Two-thirds of installers interviewed were positive about the role played by the RHPP2 Scheme in generating and sustaining demand amongst owner occupiers (i.e. private households and households in the Communities Scheme) and social landlords, and that it had been good at maintaining the supply chain, if not building it up. Installers noted how the RHPP2 Scheme had helped to act as a ‘*stop gap*’ to the domestic RHI and that it ‘*maintained the continuity*’ in demand until the domestic RHI was launched.

⁴ Source: Follow-up (FU) surveys (Wave 1 (FUW1) and Wave 2 (FUW2)). This compares with 89% reported in the immediate post-installation survey. Follow up survey results were used as they give a measure of satisfaction once the technology has been used for a heating season.

⁵ Source: on-line census of all householders who applied for and redeemed an RHPP voucher through a Communities Competition project.

⁶ Source: postal and online census of all tenants where social landlords have installed RHT

Installers supplying the growing social landlord market appeared to have benefited more from the Scheme than installers who concentrated exclusively on the domestic household sector in terms of increasing revenues and the size of their business to meet demand. The effect of the grant to social landlords was recognised by several firms, for example, one installer noted that the RHPP2 Scheme had *'raised the profile of renewable heating technologies within social housing providers and made people commit to doing a bit more.'* Another installer suggested the grant had been essential in driving purchases of heat pumps from social landlords (but not from private householders).

Lessons learned from RHPP2 Scheme administration and delivery for future policy measures designed to support the domestic take-up of renewable heat technologies

Social landlords and community groups played important roles in securing take-up

Installations in social housing offered opportunities for the growth of renewable heat technologies markets: Analysis of the published take-up data⁷ indicates that the social housing market represents a significant share of the total renewable heat technology market. This was acknowledged by some installers interviewed who reported developing services targeted at and specialised in the social housing market. Interviews with a sample of social landlords shows the RHPP2 Scheme attracted participation from social landlords that were experienced in the installation of renewable heat technologies as well as those looking to learn from and test the use of renewable heat technologies and related planning processes. Social landlords were motivated to install renewable heat technologies by expected improvements in tenant welfare (comfort and lower heating bills) as well as financial returns for their organisation. Projects in social housing provide scope for testing and demonstrating the benefits of renewable heat technologies that smaller households and private tenants might benefit from, and for increasing awareness of these benefits amongst (non-participant) housing providers: *"If the possibility comes up again we will be much better placed to take advantage of it as we have learned a lot from the process. We now also have better information on running costs which we can use to inform [potential] customers"* (Participating Registered Social Landlord 17), *"[Participating in RHPP] has prompted other Registered Social Landlords to come and have a look at what we have done. It has helped educate other housing providers [about the technologies]"* (Participating Registered Social Landlord 11).

The RHPP2 Scheme has demonstrated the facilitation role that community groups can play to support delivery: Despite the reported challenges noted above, many of the Community Group Leads described their project as a success. This was related to their learning from the project and the advantages they could identify rather than the number of installations achieved. *'For us, as an organisation we are a lot more knowledgeable about the practical problems around renewable tech and the practical problems that people in the communities where we worked face. We also learned about the importance of using community leaders to build trust and raise interest'* (Large rural area group, Community Group 16). They highlighted that the Scheme had promoted much greater awareness of renewable heat

⁷ Available at: <https://www.gov.uk/government/statistics/rhi-and-rhpp-deployment-data-august-2014>

technologies across their communities: *'The Scheme has drawn attention to alternative technologies and there is a growing interest and awareness in these'* (Village-area group, Community Group 15). Receiving support from a community group was an important factor for those who had installed renewable heating technologies as part of the Communities Scheme. Over half (55 per cent) of all installations were unlikely to have been made in the absence of the voucher.

Targeting different types of households was possible

The three mechanisms achieved installations across a wide range of households, in terms of household income, age, and property type based on household descriptions provided by respondents to the three respective censuses. Take-up under the private household voucher scheme, compared to those that had installed under the Communities Scheme, tended to be made by older, more affluent households living in large, detached houses and for whom the incentive provided was less influential. The social landlord competition made a major difference in the household profile benefiting from the Scheme, with households (social tenants) on lower incomes and in smaller properties compared to households using the other two schemes.

The novelty of renewable heat technologies did not limit the take-up by groups unfamiliar with the technology: The census data for private householders, households in the Communities Scheme and social tenants, together with interview data indicates there were no major concerns about the installation and use of a renewable heating system. Users of the renewable heating technologies felt well informed based on their own research and, in the case of social tenants, felt well informed and briefed on the use of the renewable heat technology. The willingness of those with installations to recommend their use (81 per cent of installations) was high across all customer groups.

The incentives provided by the Scheme varied between customer groups and influenced take-up: The availability of a one-off grant payment was more important to households in the Communities Scheme (55 per cent of installations in the communities scheme would have been unlikely to take place in the absence of the scheme) than to those who redeemed a voucher via the private householder scheme (19 per cent were unlikely to have taken place without the scheme). It has not been possible to establish how much this was due entirely to the difference in voucher value, although it is obviously an important factor. Another possible factor might have been the different value placed by householders on the incentive provided by the planned renewable heat incentive (RHI). However, awareness and anticipation of the use of the RHI was very high among both groups of households (87 per cent installing under the private household scheme had heard of the RHI and 78 per cent installing under the Communities Scheme were planning to apply for the RHI) playing an important role in supporting take-up.

Discounts were negotiated as part of the Communities Scheme but the volume of installations achieved didn't always allow them to be realised: An objective of the Communities Scheme was for community groups to look to secure discount agreements with installers, based on bulk purchase. While many of the groups reported securing a discount, interviews revealed that few were realised due to insufficient sales volumes being achieved. For example, one Community Group Lead reported negotiating a 5 per cent discount for sales of five to nine units and a 10 per cent discount for 10 or more sales; only two renewable heating

technologies were finally installed. Nonetheless, such examples indicate the potential for bulk purchase schemes to negotiate discounts to help reduce up-front costs.

Working with community groups helped promote renewable heating Community groups provided an additional mechanism for promoting renewable heat technologies and the installation of technologies, especially in off-grid areas located in more rural areas. Most groups reported that they had been able to work well with local installers, who were keen to work with them to build a local market and increase clients for their business: *'The installer wasn't there to sell he was there to guide people...so moving away from the whole commercialism of energy'* (Village-area group, Community Group 10). Most of the Community Group Leads interviewed felt that the Scheme design would have benefited from further community group involvement. They saw greater, earlier involvement of community groups as key to effective design, particularly in understanding rural issues.

The role of installers was important in facilitating market take-up: As noted above, the RHPP2 Scheme has helped to test the demand for renewable heat technologies across a number of market 'niches' (for example, different building types in different regions and with different ownership structures – private versus social). This opportunity to 'road test' the viability of new technologies in different settings and to see what works well has provided an important demonstration effect. One installer for example had helped to improve renewable heating installations where systems were not performing as designed, building a reputation for themselves in the process for troubleshooting. As reported in earlier sections, installers have played a role in supporting social landlords, community groups and households by providing information and advice.