Renewable Energy Consumer Code's response to DECC's consultation on the RHI: A reformed and refocused scheme (URN 16D/012)

Renewable Energy Consumer Code (RECC) is a consumer code for businesses that sell and install small-scale renewables systems in the domestic sector. RECC currently has 2,600 members, down from 4,000 in 2015. RECC is administered by Renewable Energy Assurance Ltd. The Code is approved by Certified Trading Standards Institute (CTSI) under its Consumer Codes Approval Scheme (CCAS). It is administered by Renewable Energy Assurance Ltd (REAL), a wholly-owned subsidiary of the Renewable Energy Association (REA), the major trade association in the renewables sector.

RECC is pleased to respond to DECC's consultation on reforming and refocusing the Renewable Heat Incentive (RHI). The bulk of this response centres on the proposals for the domestic RHI since that is the focus of RECC's work, and the area on which we have collected evidence. However, we have made some more general comments at the start of the response. Further, we fully support the response submitted by REA, REAL's parent company.

RECC supports the RHI as a mechanism for incentivising domestic consumers to switch to more sustainable heating and hot water systems. Furthermore we understand that DECC is anxious to control costs and to ensure that funds are spent as effectively as possible. However, RECC does not support DECC's intention to direct available funding away from the domestic sector towards the larger commercial sector. We are concerned that some of DECC's proposals will be counter-productive and will not achieve the results DECC intends them to; and that some of them risk leading to increased levels of consumer detriment.

Degression and trigger setting

1. **Do you agree with the proposed policy approach for degression and trigger setting? No. Please provide evidence to support your answer.**

RECC recognises the need to control costs and adjust tariffs where they have stimulated market uptake and reduced the capital costs of the technology. However, we are concerned that DECC's proposed degression mechanism is too aggressive and continues long after reduction in market uptake, and that there is no mechanism to increase tariffs to previous levels in case of low market uptake. Therefore we consider that the degression mechanism needs reforming.

The main purpose of the degression mechanism is to control costs and limit market uptake if deployment of a technology has gone over its assigned budget. However, RECC considers that the degression mechanism should also take broader RHI goals into consideration, including the need to

'*develop the renewable heat market and supply chain so that it can support the mass roll out of low carbon heating technologies'*. Stable markets in which companies can develop their skills and knowledge, invest in supply chains and reduce their costs are the ideal which DECC should be seeking to achieve through the RHI.

Contrary to this, to date, the RHI has helped created boom and bust cycles, particularly, in the domestic and small non-domestic biomass markets, in which we have seen significant uptake, followed by rapid tariff degression. This initially accelerated deployment and then, once the tariffs were too low, all but halted deployment. Tariff degression continued to be triggered long after deployment had dropped, despite little or no increase in forecasted spend or even a decrease in spend. This boom and bust cycle does not foster stable markets.

Other cross cutting issues

2. **Can you provide any compelling evidence as to why RPI would be a more appropriate measure of inflation than CPI for all technologies across the RHI?**

Although RECC appreciates DECC's reasons for wanting to switch to using CPI rather than RPI for inflation adjustments, we disagree with the proposals, since, as the IA makes clear, '*tariff payments will typically be increased by a lower amount compared to the alternative of using RPI*'. This is therefore a tariff reduction which will further reduce the financial attractiveness for projects. In addition, this will add significant complexity to the tariffs since, in the transition from RPI to CPI, DECC will have to publish multiple tariffs with different indeces. Finally, many systems, even at a relatively small scale, are funded through loans. RPI provides a better reflection on the cost of servicing loans than CPI.

Ground source heat pump systems with shared ground loops

9. **Do you think that an owner of a shared loop system should be able to apply to the Domestic RHI? No.**
   Please provide evidence to support your response and how this would encourage greater deployment, drive down installation costs and improve performance of GSHP.

11. **Do you agree that:**
    a. **If shared loop systems become eligible on the Domestic RHI, they should receive the same tariff as individual GSHP systems under the Domestic RHI? No.**
    b. **The heat demand limit proposed for individual GSHP systems on the Domestic RHI should be applied (25,000kWh/yr per household on the shared ground loop)? Yes.**

    Please provide any evidence you may have as to typical differences in costs to support your position.

12.
    a. **Do you think that the proposals relating to shared ground loops result in an increased risk of overcompensation? Yes.**
    b. **How could we develop our policy to best mitigate these risks?**

c. **Do you think that new-build properties should be treated differently to avoid overcompensation? Yes.**
d. **Do you think the number of dwellings is one of the risk factors which may contribute towards overcompensation? Yes.**
e. **Do you think there should be a specific limit to the number of dwellings? No. Please provide any evidence to support each of your responses.**

13.

a. **Do you agree that these proposals should apply to social and private landlords only? No.**
b. **Do you think private homeowners who are collaborating together should be able to apply? Yes.**

14. Do you agree that if deeming is introduced to the Non-Domestic RHI scheme for this type of project, metering and monitoring service packages should be mandatory to allow performance data to be reviewed by Government/user/owner? Yes.
Please provide evidence to support your response. If you do not support this proposal we seek recommendations of how to establish the performance of heat pumps supported.

RECC does not understand why shared ground loop systems should be treated differently from other district heating systems or private wire networks including those supported by geothermal or biomass. We do not consider that they should be considered as domestic systems eligible for the domestic RHI tariff. Individual home-owners would not have full control over the performance of the ground loops, and would be vulnerable if their systems did not work. They would not receive the RHI payments and so would be divorced from control of their heating systems.

We are concerned about the potential for complex business models, involving one owner of a ground loop who leases out the heat to a number of different home-owners. The domestic RHI tariff is designed to cover the full capital cost of a GSHP system, but in a shared loop scenario the capital costs will be reduced, and therefore the home-owners will be over-compensated vis-à-vis other home-owners. These systems should therefore not be eligible for the same RHI tariff as single domestic householders.

<u>Introducing Heat Demand Limits across main RHI Technologies</u>

15. Do you agree that the proposal to introduce heat demand limits will contribute to achieving the aims of the reform of the RHI? No. Please expand.

16. a) What are your views on the limits of: 20,000 kWh for AWHP; 25,000 kWh for GSHP and biomass?

b) What would be the merits of higher/lower limits? Please expand.

17. In the light of the issues raise in para 5.20, do you have any alternative proposals to heat demand limits which would achieve the same aims and which would be simple for potential applicants to understand, deliverable and applicable across the GB-wide scheme? Please expand.

Properties with high heat demand offer the potential for large CO2 emissions reductions. Therefore RECC considers it self-defeating to impose heat limits for domestic heat technologies. In particular, RECC does not agree that there should be a heat demand limit for domestic biomass boilers which lend themselves particularly to larger domestic properties, particularly those with their own wood fuel supply.

Heat pumps perform much better in properties with a low heat demand. Therefore RECC considers the proposal to impose heat demand limits to be less problematic for heat pumps than for biomass. Nonetheless, GSHPs can be effective in larger properties and these might be deterred by the heat limit. Equally, it would not be equitable if GSHPs with shared loops were not subject to heat demand limits while larger, single properties were. Solar thermal systems work well in combination with other heat technologies and such combinations should also be incentivised.

RECC considers that DECC's criterion should be based on its ability to achieve cost-effective CO2 emission reductions, and it should reward domestic consumers accordingly. Using any other criterion will skew the implementation of heat technologies and distort the market by incentivising the take-up of less efficient systems.

Making it easier for less able to pay households to benefit from the RHI (assignment of rights)

18. Do you have alternative proposals, beyond those summarised above, for further changes which may help increase deployment among those less able to pay? Please expand.

From the evidence RECC has gained from the solar PV sector we consider that a system which RHI rights are assigned (AOR) will be far preferable to a system in which a third party owns the renewable heat system outright. Nonetheless, we consider that even AOR in the renewable heating and hot water sector will pose considerable risks and will be much more complex than for solar PV for the following reasons:

- heating and hot water are essential services for home owners and so any problems with their functioning will have a direct impact on the home owner's well-being;
- since the output from renewable heating and hot water systems is deemed under the domestic RHI, there will be no incentive on finance providers to ensure that systems are installed only in suitable properties taking all relevant circumstances into account;
- finance providers will have banked the full RHI payment by the end of 7 years, and will thus have no incentive to ensure that the system continues to function during the remainder of its 20+ year lifetime;
- there is a very real risk of increased electricity and fuel costs for home-owners.

Availability of finance

RECC is not convinced that availability of finance is currently a barrier to further growth in the domestic renewable heat market. Finance is readily available in the sector already, even for consumers with a relatively low credit rating. Rather, there are many other reasons why the take-up in the domestic RHI sector has been and continues to be steady. Some of these are outlined in more

detail in the next section. It is therefore not clear to us that the introduction of AOR is likely to increase significantly financing options for home-owners.

Indeed, the majority of domestic renewable heating systems are already sold on finance. The salesman 'sells' the home-owner the finance at the same time as the system. Finance is provided by certain finance providers active in this market, regulated by the Financial Conduct Authority (FCA) to provide consumer credit. The relevant sales company must have a Full Permission from the FCA since they are introducing home-owners to finance.

For these reasons, RECC is not convinced that the introduction of AOR will assist less able to pay households to benefit from the RHI. Rather, the IA[1] suggests that AOR is intended to increase deployment of heat pumps regardless of the ancillary costs for households. For the reasons set out in the next section RECC is very concerned that AOR could place less able to pay households in a position of having higher energy or fuel bills than they currently do. This could increase the levels of fuel poverty. It could also mean that CO2 emission reductions are reduced as a result of increased reliance on carbon-intensive electricity. Both these outcomes would be perverse and counter-productive. RECC urges Government to proceed with the utmost care.

In situ performance and running costs

Field trials published to date, including the most recent analysis pf RHPP monitoring results[2], described in more detail in the next paragraph, show that the majority of domestic heat pumps underperform *in situ*, and that, on this basis, many households will face higher electricity costs than they currently do. Similarly, there is no equivalent research on the *in situ* performance of domestic biomass boilers, the drop in oil prices means that the cost/benefit of many will be marginal if the system efficiencies are as low as available data suggests.

The analysis of RHPP monitoring results[3] estimated fuel cost savings based on the heat pump performance findings. The authors, UCL, report that only 64% of households would have seen fuel cost savings if they had replaced oil; and that only 19% of households would have seen fuel cost savings if they had replaced gas. It is critical also to note that the authors stated that the price of heating oil had dropped dramatically since the date selected for their price analysis (October 2014). These figures give further weight to RECC's contention that AOR is likely to leave a significant number of households *worse off*. If those who end up worse off are among the less able to pay households this is a matter of grave concern.

DECC itself admits that some heat pumps are '*unlikely to be providing significant bill savings to the user and are providing less renewable heat than expected*' and the most reliable recent research

[1] Consultation Stage IA: The Renewable Heat Incentive: A reformed and refocused scheme IA No: DECC0211. March 2016. Annex 4.
[2] Detailed analysis of data from heat pumps installed via the Renewable Heat Premium Payment Scheme. DECC, February 2016. Table 7: https://www.gov.uk/government/publications/detailed-analysis-of-data-from-heat-pumps-installed-via-the-renewable-heat-premium-payment-scheme
[3] Detailed analysis of data from heat pumps installed via the Renewable Heat Premium Payment Scheme. DECC, February 2016. Table 7: https://www.gov.uk/government/publications/detailed-analysis-of-data-from-heat-pumps-installed-via-the-renewable-heat-premium-payment-scheme

shows that almost half[4] are failing to perform with an SPF above 2.5 – the level at which they currently qualify for the RHI. The figures below demonstrate how easy it would be for home-owners to lose out.

Spend on oil per annum (average cost per litre March 2016 – 28.99p source = boilerjuice.com equivalent to 2.7ppkWh)

Annual Demand kWh	**Quantity of oil needed assuming 80% system efficiency**	**Cost per kWh**	**Oil costs per year**
20,000	25,000	3.5p	**£875**
20,000	25,000	4p	**£1000**
20,000	25,000	5p	**£1250**

Running costs of heat pump per annum using four different SPF scenarios

Annual Demand kWh	**Energy required where SPF =**	**Electricity cost per kWh**	HP running Cost per annum
20,000	66666kWh **SPF = 3**	13p	**£866**
20,000	8000kWh **SPF = 2.5**	13p	**£1040**
20,000	9090kWh **SPF = 2.2**	13p	**£1181**
20,000	10,000 **SPF = 2**	13p	**£1300**

Compulsory metering

RECC considers that compulsory metering is an essential pre-requisite for AOR for renewable heating systems. This will ensure that finance providers are rewarded only for systems that are actually producing renewable heat. Given that there are already several categories of applicant where metering is compulsory, RECC considers that this would be a sensible and practical way to ensure that many of the most difficult consumer protection issues are resolved. Where the actual heat generated does not cover the servicing of the loan, the balance must not be paid for by the home-owner. In addition, RECC considers that the finance provider must be responsible for any additional electricity or fuel costs which the home-owner experiences.

Assignment of responsibilities as well as rights

Evidence from the solar PV sector shows that unsuspecting home-owners are often over-sold systems, and that they rarely understand the true nature of the transaction they are entering into. Typically, finance providers fail to provide home-owners with information in a clear and unbiased manner before inviting them to sign complex agreements. They frequently exaggerate the energy bill savings home-owners are likely to make, since these are likely to be the principal benefit for home-owners.

RECC considers that home-owners who agree to AOR must be protected in a number of other important ways:

[4] Consultation Stage IA: The Renewable Heat Incentive: A reformed and refocused scheme IA No: DECC0211. March 2016. Annex 4.

- home-owners must have full and clear information about the arrangement before they sign an agreement for installation and AOR;
- information about likely energy bill savings must be in a standardised form using only agreed performance estimate methodologies assumptions so that this vital element is not exaggerated and home-owners can rely on it;
- if the heating system will require any changes to the home-owner's behaviour, or where there are complex operating instructions, this must be made clear before any agreement is signed;
- there must be a standard agreement between the home-owner and the finance provider to ensure that there are no unfair conditions and that the obligations on each party are clear;
- home-owners must have the right to cancel the agreement without penalty should the system become defective in any way;
- should the parties to the agreement change, the agreement should be renegotiated – this might be when the home-owner sells the property, or when the finance provider sells the income stream on;
- the finance provider must be responsible for maintenance, servicing and cleaning of the system to ensure that it operates at optimum level at all times;
- where the installer was contracted directly by the finance provider, the agreement with the home-owner must make it clear that there is a direct relationship between the installer and home-owner;
- the guarantees and insurance-backed warranties in respect of the installation must be in the home-owner's name;
- where the finance-provider has a number of AOR arrangements with home-owners, there should be a lower RHI tariff payable since the up-front capital investment will have been lower;
- finance providers who enter into AOR arrangements with home-owners must be FCA-regulated and members of a CTSI- approved consumer code.

Joint bank accounts

Finally, RECC urges DECC to rule out the current practice according to which finance providers can open joint bank accounts with home-owners, and in this way access RHI payments directly. We consider that RHI payments must be paid directly to home-owners. Any assignment of those rights must be protected by the safeguards set out above. We consider that the option of having joint bank accounts will allow less scrupulous finance providers to operate without the necessary safeguards in place. RECC has already registered a number of complaints about these arrangements, particularly for biomass boilers.

Heat pump tariffs and performance

19.

a. Do you agree with reviewing the tariffs available:

i. Within the range of 7.42 -10.0p/kWh for AWHP? Yes/No.

ii. Up to a maximum of 19.51p/kWh for GSHP? Yes/No.

The consultation proposes to increase the RHI tariff rates for domestic air to water heat pumps AWHPs by up to 30% and for GSHPs by a small margin. These proposals assume that, by increasing the rates in this way, the deployment of AWHPs and GSHPs in the domestic sector will grow. However, this fails to take into account several important factors.

The domestic RHI is principally aimed at retrofitting off-gas-grid properties. The domestic RHI tariffs, including for AWHPs and for GSHPs, have been designed to reflect this. The consultation makes no reference to the fact that heat pumps are not suitable for properties with poor insulation and draught-proofing which require higher heat loads. Yet this is typical of older off-gas-grid properties. Rather AWHPs and GWHPs are most suitable for energy-efficient new build properties. It is not clear that the central premise in the consultation is well-founded, and thus it is not clear that higher tariff rates can automatically deliver increased levels of sustainable deployment.

Further, since AWHPs and GSHPs provide low-grade heat, they will perform best when combined with underfloor heating and/or very large radiators. Domestic consumers are frequently not made aware of the difference between low-grade heat and conventional heat. They are then typically dissatisfied when they do not feel as warm as they did with a conventional system. Making substantial changes to existing heating systems adds to the total cost of an AWHP or a GSHP. Further, GSHP systems can be complex and require high standards of design. Complaints can often be traced back to poor design practice which results in increased energy costs.

Offering domestic consumers a Rate of Return on AWHPs of up to 12.5% and on GWHPs of 3-4.5% (compared with the -0.5-1.5% Rate of Return to biomass boilers) will result in an imbalance in the domestic RHI scheme. RECC is very concerned that higher tariff rates will lead to increased mis-selling, particularly of AWHPs, by companies using aggressive sales tactics. Home-owners, who are unfamiliar with these technologies, will be driven towards technologies based on the highest Rate of Return rather than suitability for their home, and on the basis of unrealistic and inaccurate performance information. RECC registers a high number of complaints about these technologies which reflect many of these issues.

Performance estimates for heat pumps

If consumers are to make informed choices about the technology most suitable for their home, they must have access to reliable information which is easy to understand and on the basis of which they can compare offers. The Consumer Rights Act 2015, which came into force last year, gives domestic consumers considerably more rights vis-à-vis traders than they had under the previous legislation.

Pre-contractual information, whether provided verbally or in writing, will now be considered an implied contract term, and consumers will be able to take action if it is in any way misleading and they can show they relied on it in making a purchase.

RECC analysed performance estimates presented to consumers by a sample of its members during 2013, 2014 and 2015[5]. The full results of the analysis are attached to this response. The conclusion was that consumers are signing contracts to install heat pumps without understanding how they work, their likely performance, any likely additional costs and any changes to their behaviour they will need to make in order to achieve best results.

In summary, of the nine heat pump performance estimates studied in greatest detail as part of the research:

- seven out of the nine estimates were not clear or accessible
- one estimate gave no figure for overall heat demand, while two others gave information contradicted by very different values in alternative estimates with no explanation
- three out of the four estimates for GSHPs did not give the required technology-specific design information included in MIS 3005 (4.4.24)
- in only three estimates were the main performance values consistent (for example, as described in the methodology set out in Appendix E of MIS 3005)
- in five estimates the main values were significantly misleading, and
- all the three estimates that included 'alternative estimates'(based on an alternative methodology) were presented in a non-compliant way and were misleading.

RECC's conclusion is that home-owners are very often not being provided with accurate or adequate information about the likely performance of a heat pump before they sign a contract. Indeed, they are often provided with misleading and unrealistic claims on which they rely when making a purchasing decision. Added to this, the monetary value of these contracts can be very high, especially for GWHPs. This situation inevitably leads to dissatisfaction and complaints when actual performance does not match expected performance. Further, even if consumers had been provided with accurate and adequate information, it is quite likely that the heat pump would not perform to the correct standard in any event.

These findings sit uncomfortably alongside the analysis of RHPP monitoring results commissioned by DECC[6]. This shows a mean SPF H4 of 2.3 for AWHPs and 2.48 for GWHPs for the Sample C UKSET. Overall, however, the authors of the research report place stress on the SPF H2 results and conclude that, while more than 90% of installations have resulted in at least some CO2 savings, more than 40% of AWHPs and more than 20% of GWHPs included in the research were operating below the

[5] Small-scale renewable energy generation: the provision of performance information to consumers in the heat technology sector, Colin Meek, independent consultant, RECC, March 2016.

[6] Detailed analysis of data from heat pumps installed via the Renewable Heat Premium Payment Scheme. DECC, February 2016. Table 7: https://www.gov.uk/government/publications/detailed-analysis-of-data-from-heat-pumps-installed-via-the-renewable-heat-premium-payment-scheme

threshold used by the European Commission to classify systems as 'renewable', that is an SPF of at least 2.5. The IA[7] states that:

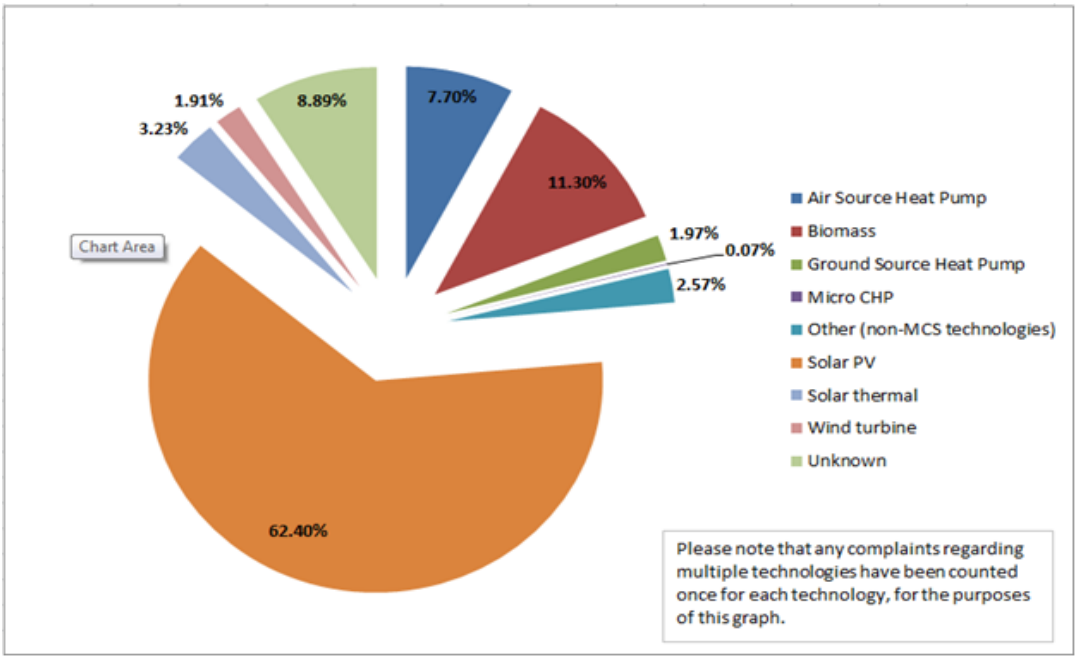
> *"The latest RHPP evidence concludes that heat pump performance across the whole RHPP stock monitored averages 2.3 (ASHP) and 2.75 (GSHP). It also concludes that only a portion of the total heat pump stock operates at an SPF of 2.5 or greater: 53% (ASHP) and 77% (GSHP)."*

Any shortfall in performance will be made up with expensive and CO2-intensive electricity. Government assessments of the CO2 emission reductions achievable from heat pumps are thus typically incorrect and over-stated.

Complaints registered with RECC – heat pumps

RECC already registers a high number of complaints about heat pumps, and the many of these involve mis-selling. In many cases consumers have been sold heat pumps, and particularly AWHPs, despite the fact that they live on the gas grid. They end up with higher energy bills because heating their hot water and some of their space by electricity, thus paying much higher electricity bills than they have in the past and emitting high levels of CO2. In a number of cases neighbours have complained about the noise levels from AWHPs.

Complaints registered with RECC in 2015 by technology



The chart above shows complaints about AWHPs and GSHPs as percentages of total complaints registered with RECC. In 2015 there were 108 complaints about AWHPs, accounting for some 8% of

[7] Consultation Stage IA: The Renewable Heat Incentive: A reformed and refocused scheme IA No: DECC0211. March 2016. Annex 4.

the total registered, and there were 28 complaints about GSHPs, accounting for some 2% of the total registered.

When compared with all domestic installations during 2015, we see that 2.8% of all AWHPs and 3.1% of all GSHPs installed in 2015 resulted in a complaint registered with RECC. Both these figures are over three times the 0.6% of all domestic solar PV systems installed in 2015 that resulted in a complaint registered with RECC. (See table below.)

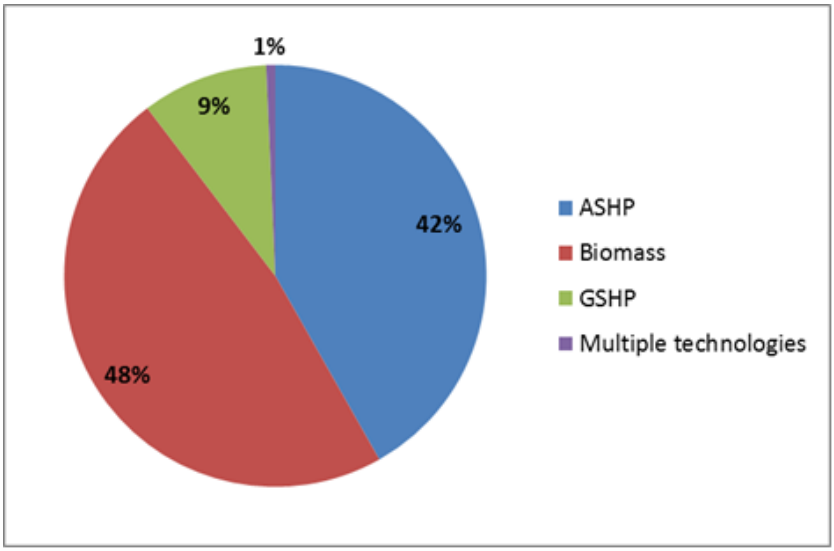
Technology	Number of complaints registered with RECC	Percentage of all complaints registered with RECC	Percentage of all domestic installations of technology	Total domestic installations in 2015
AWHP	108	8	2.8	4,025
GSHP	28	2	3.1	894
Biomass	160	11	3.9	4,150
Solar thermal[8]	48	3	4.8	997
Solar PV	948	62	0.6	155,122
Other[9]	204	13	n/a	n/a

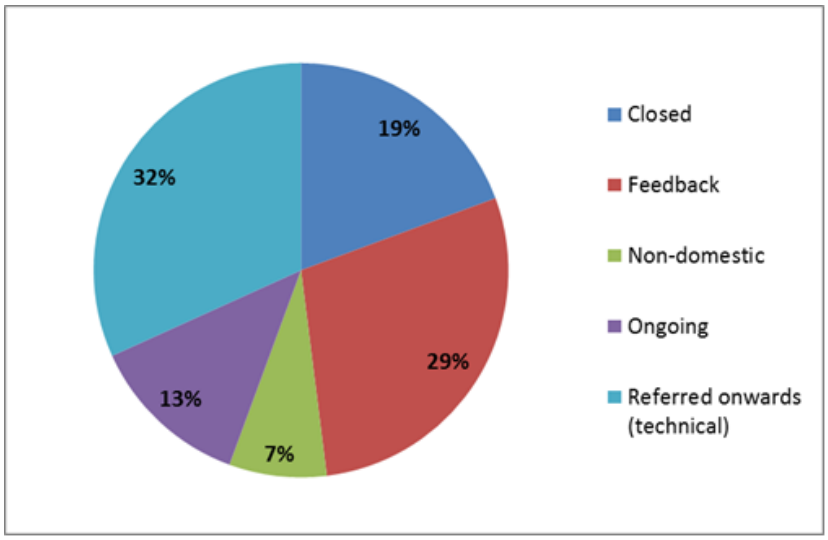
These complaints represent high levels of consumer detriment. The numbers in the table do not take account of complaints registered with other bodies such as MCS Certification Bodies, Citizens Advice, Trading Standards, finance providers and FOS; nor do they take into account those complaints which are simply not registered at all perhaps owing to lack of confidence or knowledge on the part of the consumer, or where consumers have taken a rational decision that the cost of the time and effort it will take for them to pursue a complaint will be greater than the sum they can hope to recoup as a result. Registered complaints are thus the 'tip of the iceberg' indicating that the real level of consumer detriment is actually much higher than that recorded.

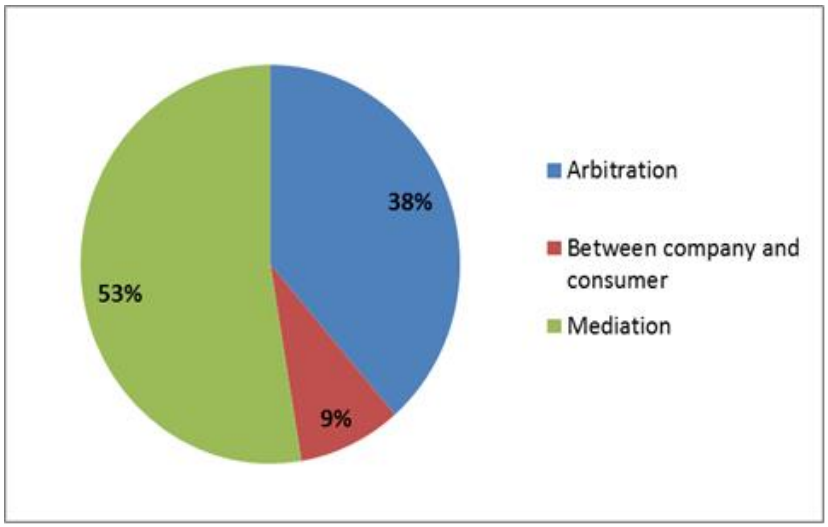
Complaints about AWHPs and GSHPs can be complex and difficult to resolve, frequently requiring more than one body's involvement. The chart below shows the principal issues behind complaints. In many cases several issues exist together. Twenty complaints about heat pumps and biomass boilers were referred to independent arbitration in 2015. Arbitrators awarded consumers over £150k in their awards and, in many cases the arbitrator also ordered that the entire heat pump be removed since it was unsuitable for the property and had thus been mis-sold.

Heat technology complaints registered with RECC since April 2014 by (a) technology, (b) category and (c) resolution

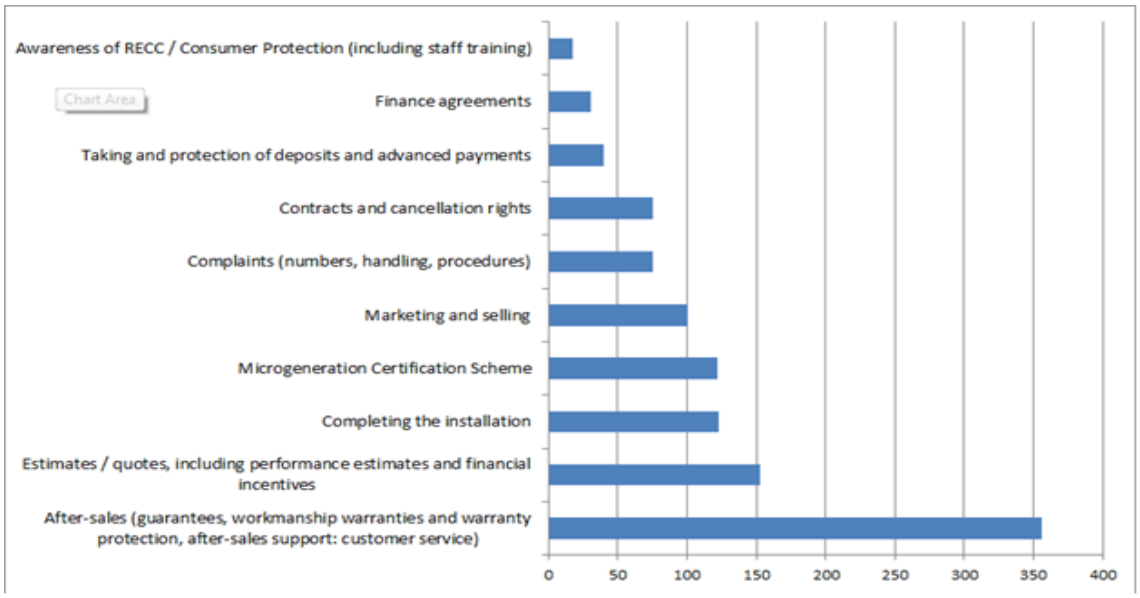
[8] Most of the 2015 solar thermal complaints relate to RHI legacy issues: consumers were typically led to believe they would be eligible for the RHI, but in fact for a variety of reasons they were not.
[9] This number includes wind, micro CHP, other non-MCS technologies and 'unknown'.


1%
9%
42%
48%
ASHP
Biomass
GSHP
Multiple technologies


19%
32%
29%
13%
7%
Closed
Feedback
Non-domestic
Ongoing
Referred onwards (technical)

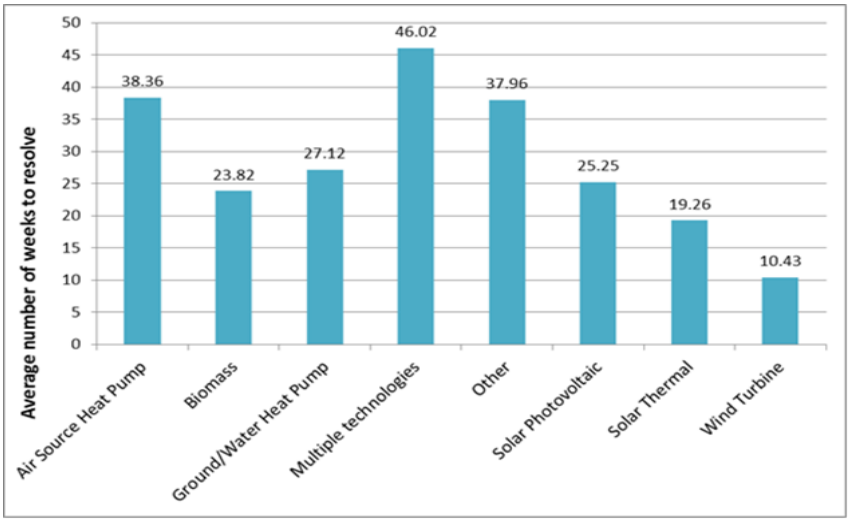

38%
53%
9%
Arbitration
Between company and consumer
Mediation

Principal issues raised in complaints registered with RECC since April 2014

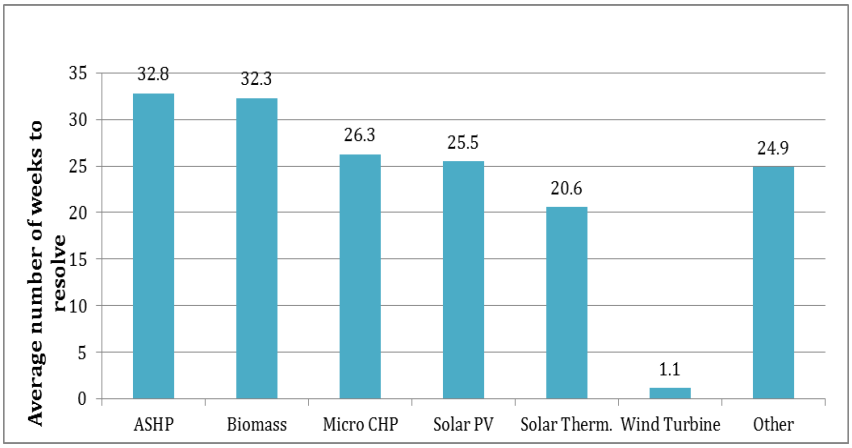


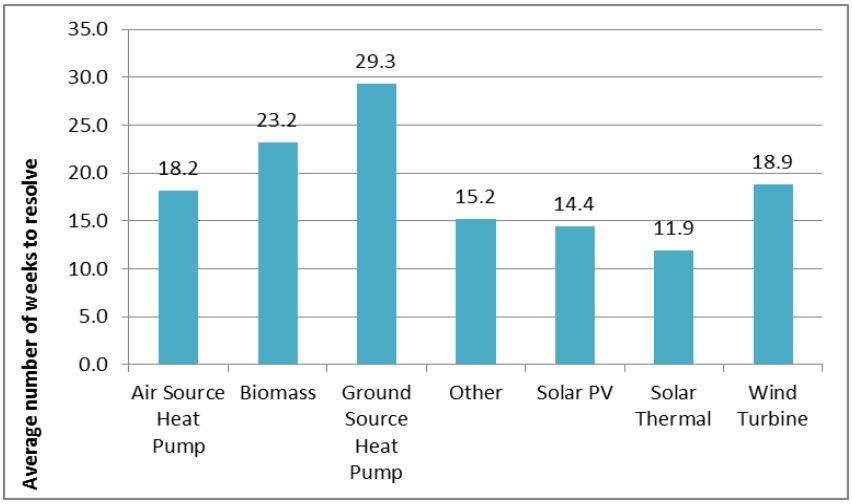
The charts below show the average length of time it took to resolve complaints by technology in 2015, 2014 and 2013. They show that it took some 40 weeks on average to resolve each AWHP complaint in 2015 (18 in 2013) and 27 weeks on average to resolve each GSHP complaint in 2015 (30 in 2013). Overall, on average, it took 26 weeks to resolve complaints about heat technologies in 2015.

Length of time taken to resolve complaints in 2015, 2014[10] and 2013



[10] During 2014 none of the 13 complaints registered with RECC about Ground Source Heat Pumps (GSHPs) were resolved. By the end of 2014, GSHP complaints were categorised as ongoing, referred onwards, or closed.





Examples of complaints – Heat pumps

AWHPs

1. Consumer has an ASHP installed. There are some technical faults with the system including loud noise; the position of the pump and general installation issues. Complaint referred onwards to CB.

   Noise issues: Noise intrudes into conservatory, living room and lounge.
   Position of pump issues: Heat pump is enclosed on 3 sides which amplifies the sound.
   Other installation issues: Cylinder not positioned on adequate base for loft installation – dangerous; Cylinder base not fixed to structure, or spreading weight load. The response time between 'calling for heat' and system running is poor, whilst the control logic is not fully understood, as system should have the ability to respond when temperature drops away from set point.

2. Consumer has had an ASHP supplied but not properly connected or completed and she has not been left with any paperwork. The consumer was not given a contract or a receipt for

her deposit paid. The company had charged a higher fee than initially quoted when requesting a further advance payment. Complainant offered arbitration.

3. Consumer signed a contract for an ASHP to be installed in July 2014. Consumer has not been issued with an MCS certificate and has now lost the ability to apply for RHI. Consumer has chased the company several times for the certificate, but they said no one in the company is currently MCS certified. Consumer would like to receive a valid MCS certificate. Consumer is also seeking £4,800 over 7 years for loss of RHI income. Complaint referred onwards to CB.

GSHPs

1. This complaint has not been resolved after three years. The GSHP serves two adjacent properties, which have separate addresses.

   Consumer was sold the system essentially as a financial package where the stated performance of the machine (COP 3.54) would give a financial return on the capital outlay within about 10 years. The sales approach rested squarely on financial models that hinged on this performance figure. From the start the system has failed to deliver this level of performance; in year one the annual averaged performance was about 50% of this value.

   Consumer recorded data regularly and what became apparent was that the performance of the machine was positively correlated with the daily output of the machine, i.e. this was a design property of the machine; the performance data given initially was unrelated to the practical use of the machine. Consumer discussed this with the installers and with representatives from the manufacturers and they repeatedly denied that he could be correct. However, they seemed to be unable to offer any other alternative explanation even after many phases of testing the GSHP. Because the installers could not explain the data they even offered to negotiate some sort of compensation with the manufacturer. This has never happened. More recently, the largely one-way discussions have given rise to a new term in their vocabulary, the Seasonal Performance Factor (SPF) which they use to explain why the COP is less when the HP is used less. In principle, they have acknowledged that the consumer was correct from the beginning in saying that performance is related to daily output and is a consequence of the basic design of the system.

   The GSHP provides heating and hot water supply. However, the consumer feels that he was persuaded into a considerable financial outlay (approx £20K) based upon their financial models that were fundamentally based upon performance data that the system could never deliver under standard seasonal variations. In this sense, the consumer feels that this is a case of financial miss-selling that warrants some compensation. He remains dissatisfied.

2. Consumer has a GSHP installation and was informed that he would receive the £2,000-£3,000 in RHI payments per annum leading to a 5 year payback time. After a site survey the

consumer was informed that this figure would be revised, however this was not provided to the consumer in writing. (Complaint ongoing)

The consumer has now found that he would be getting only £917 per annum from the RHI and there would not be a payback period. The consumer is seeking financial compensation.

b. How would an increase to current tariffs impact deployment? Please provide evidence to support your response

Deployment would most likely increase for AWHP, which would have the biggest tariff increase, as the financial returns would increase significantly, above the domestic RHI's aim of 7.5%. However, as stated above, unlike the general housing stock, off-gas-grid properties more often need a higher heat load than offered by AWHPs. For this niche market, other technologies such as biomass boilers would be more successful.

20.

a. Do you agree further Government and industry action is required to drive up the performance of heat pumps and tackle underperforming installations on the RHI? Yes.

It is important to remember that 20 million households in the UK will not be suitable for renewable heating systems, other than solar thermal, since they are on-gas-grid. Gas boilers have high efficiency, gas is relatively low cost and CO2 emission reductions are greater than for electricity. In the case of the remaining 5 million households, there is a range of factors including tenure, age, condition of housing stock and location, which make it complicated for home-owners to understand whether a renewable heating system is a good option for them and, if it might be, which one. These are all valid reasons, and home owners are correct to consider them carefully. It is also true that home-owners generally consider changing their boiler when it breaks down – thus it is a distress purchase. Given the complexity of these alternative systems they do not necessarily lend themselves to a distress purchase.

The Government should not look simply at the statistics for uptake for heat pumps. Rather, the Government should be keen to ensure that every system installed is installed correctly and in a suitable location. There is no point in having renewable heating systems installed if they do not deliver real CO2 savings. To this end Government needs to pay more attention to raising the skills of installers and to enforcing the relevant standards.

RECC has identified fundamental issues affecting the take up of AWHPs and GWHPs in the domestic sector. There are clear actions Government can take which will ensure that consumers can have confidence when making a purchase decision. Firstly, RECC considers that Government should take steps to ban cold calling and doorstep selling in this complex renewable heat sector.

Secondly, Government must ensure that consumers are provided with adequate and accurate information before they sign a contract. This information must enable them to understand clearly how a heat pump is likely to affect their behaviour, their comfort and well-being, their energy costs

and the lay-out and fabric of their home, inside and outside. Installers and salesmen interacting with domestic consumers must be much more closely regulated and their compliance with standards enforced much more robustly.

Thirdly, Government must ensure that the product and installer standards are adequate to ensure that heat pumps function as specified and are only installed in suitable properties. Penalties for mis-selling must be very stringent, and consumers must have access to compensation when they have not benefitted from a heat pump in the way they were led to believe they would. Products must be regularly retested to ensure they continue to meet the standard. Government must continue to monitor the quality of actual installations as well as the actual performance of a sample of heat pumps to ensure that the recorded SPF is over 2.5. Government must also monitor consumers' electricity costs. Installers must complete compliance checks to ensure that there is a clear audit trail.

b. How can the RHI best be developed to tackle this and drive up deployment?

The emphasis must be on the provision of objective information and property-specific estimates and advice to home-owners. Systems should only be sold where they are suitable for individual needs.

21. In your recent experience, what are the main financial barriers to the deployment of heat pumps in the domestic sector? In particular, what are the main reasons why the current tariffs have not achieved higher deployment levels? Please provide any supporting evidence.

Information provided in the earlier sections.

22. In your recent experience, what are the main non-financial barriers to the deployment of heat pumps in the domestic sector and how can they best be overcome? Please consider how they compare to the financial barriers in terms of impact on uptake and provide any supporting evidence.

Information provided in the earlier sections.

23. Is there a way to link payments to actual performance which balances consumer confidence with incentives for higher performing systems? Yes. Please provide evidence to support your response.

Compulsory metering and monitoring would be effective method of ensuring higher system efficiency.

24.

a. Performance monitoring can play a key role in driving up heat pump performance. What can we do to make the RHI's metering and monitoring service package more attractive? Please provide evidence to support your response.

b. Are there alternatives to incentivise the monitoring of heat pump performance? Please provide evidence to support your response

Increasing the RHI incentives for adopting the metering and monitoring package would see increased uptake. Securing the buy-in of all manufacturers would also assist.

Support for biomass

Biomass boilers offer the most cost-effective low-carbon heating option in the domestic RHI to the niche market of off-gas-grid buildings. They provide sustainable heating in domestic off-gas-grid properties, with high temperature heating which is more likely to work in older houses. Biomass systems have been most effective at replacing oil boilers among the supported technologies under the domestic RHI, with 58% of biomass boilers replacing an oil boiler compared with 27% of heat pumps and 23% of solar thermal installs.

As outlined above, for heat pumps to work well, substantial improvements to an off-gas-grid property are likely to be needed to upgrade the thermal efficiency. Without these improvements, consumers' electricity bills are like to increase, as the low grade heat will not be sufficient to heat the house and hot water. Direct electric heating will be required to provide the rest of the heat. Biomass boilers are likely to be the best fit for these homes, since they work with the existing central heating system, radiators do not need to be replaced, and underfloor heating is not required.

Over the past year, the domestic biomass tariff has been reduced from 12.2p/kWh to 5.14p/kWh, a 58% reduction. The deployment is currently a fifth of what it was a year ago, with less than a hundred new applications being received per month by Ofgem. The Rate of Return listed in the IA is between -0.5% - 1.5%, making it financially unattractive for consumers.

RECC considers that the domestic biomass tariff should be increased to at least the level as at 31 June 2015. This will offer consumers a reasonable Rate of Return. If it is not, consumers will be driven towards a poor decision, influenced by the Rate of Return alone.

RECC is extremely concerned with the proposed indicative annual deployment levels proposed in the table in section 2.26 of the consultation. Deployment levels of 1,000 biomass boilers for the domestic market and 65 biomass systems for the non-domestic market are nowhere near sufficient to maintain a competitive market, foster a supply chain to service existing boilers, and achieve cost reductions. These targets show such a lack of ambition that they will certainly lead to significant contraction in the market, companies exiting the industry, and closure of companies in the supply chain. RECC considers that DECC should reconsider this level of ambition and adjust the degression mechanism accordingly.

Support for solar thermal

25. Do you agree that we should withdraw support for new solar thermal systems in the Domestic RHI from 2017? Yes/No. Please provide evidence to support your response.

RECC does not agree that DECC should withdraw support for solar thermal, which is an important part of the low-carbon heating sector and has great potential. This is particularly true when combined with heat pumps, or part of district heating. Now is not the time to withdraw support for solar thermal. Solar thermal is to date forecasted to use a very small amount of the RHI budget compared to other technologies with just £0.74million for domestic and £0.2million in non-domestic. Removing support under the RHI at this time would be particularly harmful due to the delay and uncertainty in delivering zero-carbon homes, solar thermal is a key way of delivering low

carbon heat for new-build properties and for retrofits. Although some owners of solar thermal systems claim they would have done it without support from the RHI it will still be an important driver and it leaves a very small market available to installers, it is important that this market is maintained.

Although take up has been low, it has potential to form a very useful part of a combined system (e.g. taking domestic hot water up to safe temperature levels in a GSHP system rather than having to use an electrical boost). With take up at current levels, it has very little impact on the overall RHI budget, yet by remaining an option it might incentivise innovation and result in further take up of the lowest carbon heating source of all. If installation levels do pick up, then the degression mechanism can easily be used to bring deployment levels under control.

Further, RECC agrees with many of the points made by the Solar Trade Association (STA) in its response. The cost of solar thermal technology will come down if a growing market can be re-established, due to both economies of scale and technological development (for which there is ample evidence from abroad). Cost reductions could be as high as 30% and there is every prospect that solar thermal can become cost competitive with conventional fuels when the energy market returns to a higher oil price scenario.

Solar thermal is a perfect match for tackling fuel poverty in social housing, where the RHI can support the cost of installation while the residents benefit from much cheaper hot water. Hot water use is often significant in social housing due to high occupancy rates and high daytime water use. Looking ahead, solar thermal can provide synergies with refurbishments funded under the ECO programme, which will be particularly targeting fuel poverty from 2017.

Our principal ask of DECC is therefore to maintain support for solar thermal under the RHI to stimulate uptake under the new set of market conditions which gives a level playing field across all technologies. If DECC's proposal to remove solar thermal from the RHI is implemented, there is every prospect that the current supply chain will atrophy and the UK's solar thermal option is lost forever.

In addition, we believe that some minor changes to the scheme costing almost nothing to DECC would stimulate take-up**,** and create a wider industry impetus to promote and install solar thermal. These include making space heating and hybrid PV-T eligible for the domestic scheme and facilitating co-installation with heat pumps. In addition we encourage DECC to allocate a small share of the budget (1%) to the scheme's promotion.

RECC also agrees with the STA that the following proposed change to the domestic scheme would increase take-up of solar thermal while improving its value for money within the RHI: As solar thermal is unique having negligible operating costs, by focusing the deemed payment into the first year, as well as providing the scheme with a 10% value for money discount on the net present value of the seven-year payment, we consider that this will prove significantly more attractive to home-owners and can be justified by the nature of the technology.

29.04.2016