

**RESPONSE TO DEPARTMENT OF ENERGY AND CLIMATE CHANGE (DECC)'S  
CONSULTATION ON A REVIEW OF FEED-IN TARIFF SCHEME  
ISSUED ON 27 AUGUST 2015**

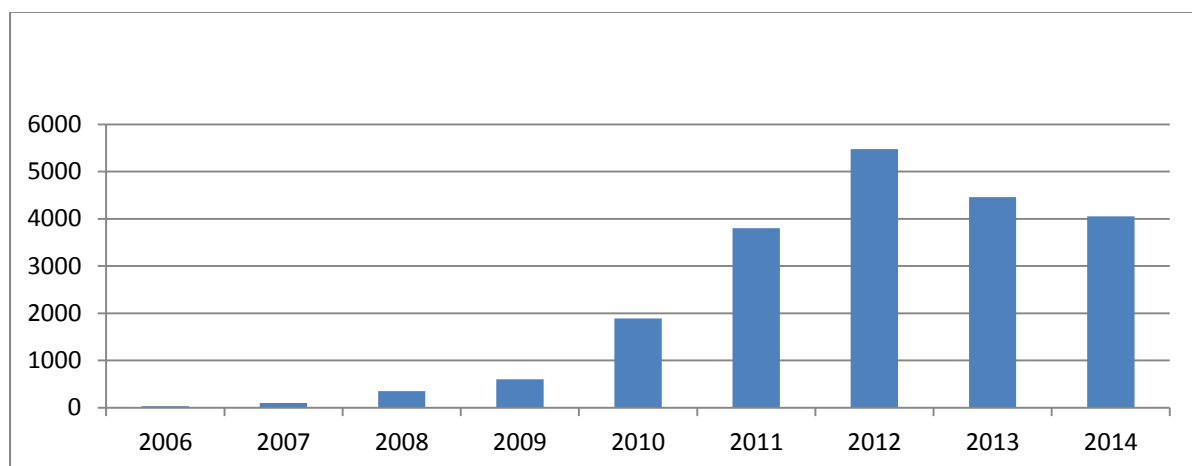
**INTRODUCTION**

Renewable Energy Consumer Code (RECC) was set up in January 2006 and is approved by the Chartered Trading Standards Institute (CTSI). Our 3,800 members sell, supply and install small-scale renewable heat or power generators to domestic consumers. Three if four of our members (3,000 in all) are engaged in the solar PV sector.

RECC is administered by Renewable Energy Assurance Ltd, a wholly-owned subsidiary company of Renewable Energy Association (REA). Membership of a CTSI-approved Consumer Code is a requirement of the Microgeneration Certification Scheme (MCS) installer standards, set out in the overarching standard MCS 001. As such the Consumer Code requirements dovetail with those of the MCS installer standards.

With the introduction of the Feed-in Tariffs (FiT) scheme for small-scale solar PV in 2010 RECC membership thus became a pre-requisite for any installer who wanted its consumers to be able to access FITs. RECC became the gate-keeper for the domestic solar PV sector, since RECC membership was a prior condition for MCS installer certification. From this time, RECC's role changed from being the administrator of a voluntary code of good conduct to being the quasi-regulator and policeman of the solar PV sector. RECC's membership rose from 500 in 2009 to 5,500 at its peak in 2012. (See chart below.)

**RECC membership by year**



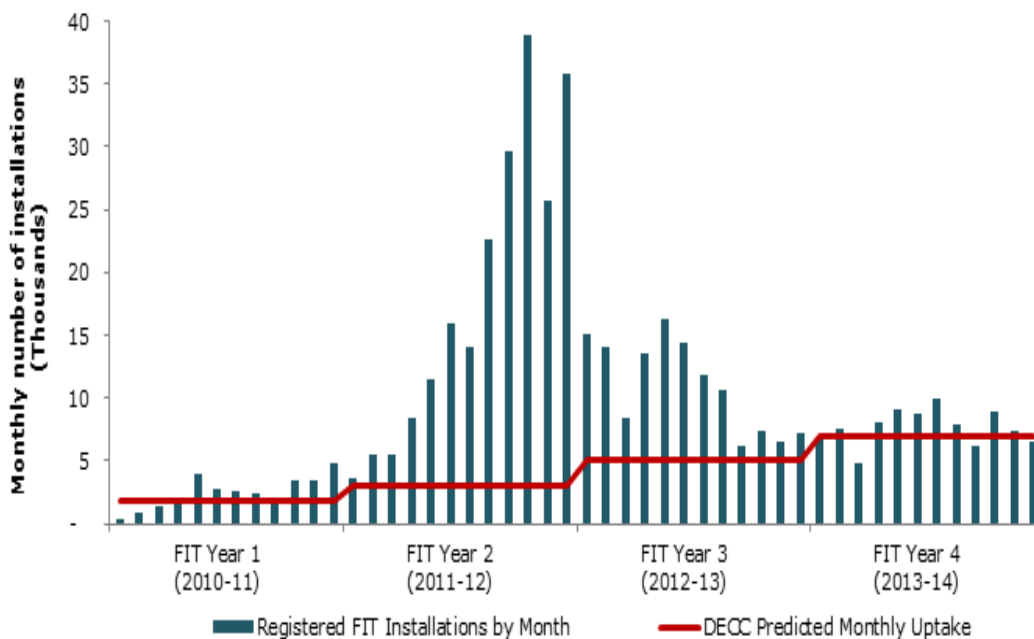
The Consumer Code covers all aspects of the consumer journey including: general business standards, selling techniques, pre-sales documentation, prepayment protection, performance estimates, quotations, after-sales activities, guarantees and warranties and dispute resolution, including the independent arbitration service. You can find the full version of the Consumer Code at: [www.recc.org.uk/scheme/consumer-code](http://www.recc.org.uk/scheme/consumer-code).

RECC endorses the content of REA’s response to DECC’s consultation, a summary of which response is included in the next section. RECC endorses REA’s responses to the specific questions in the consultation and, as a result, RECC has not responded specifically to them here.

DECC is proposing in Option 2 of its consultation FiT rate cuts of up to 87% for some sectors, with the proposed rate for domestic solar PV to be reduced to just 1.63p/kWh. The domestic sector was the one that the FIT scheme was originally designed to support, so this appears perverse. RECC does not agree that the FIT rate for domestic solar PV should be cut by 87% or that the <10kW sector should be subject to such tight deployment caps. Nor does RECC agree that the scheme should be permanently closed in January 2016. Both these options would prevent the solar PV industry from continuing in any form at all. RECC challenges many of DECC’s assumptions underpinning these options for the reasons set out in Part 3 of this response, below. However, even if the assumptions were all correct, it is hard to see how a Return on Investment (RoI) of 4% with annual FiT payments of under £100 per year for a 3kW system (including export tariff) will incentivise many new domestic systems.

RECC urges Government instead to support domestic solar PV for a further two years so that it can reach grid-parity in an orderly manner and thereafter be independently viable, perhaps with the aid of storage systems which are not yet commercially viable. In this way, industry will be able to prepare for a smooth transition away from subsidies. This will represent a more cost-effective use of funds and avoid the external costs of large-scale job losses and widespread consumer detriment. RECC agrees with REA that the boom in deployment that will already have been caused by the launch of DECC’s consultation, together with the prospect of steep FiT rate cuts in early 2016, should not be used to justify a premature closure of the scheme. The chart below clearly shows the spike in deployment which resulted from DECC’s dramatic announcement on cuts to FiT rates in 2011/2012.

**Number of installations registered for FiT compared with DECC predictions<sup>1</sup>**



<sup>1</sup> Source: Ofgem

RECC has set out in some detail in this response the scale of consumer detriment that will certainly ensue from this period of artificial boom and bust. DECC’s consultation makes no mention of this, and nor does it attempt to quantify it or to explain the arrangements it will put in place to deal with it. Our evidence is based directly on our experience in 2011/2012, the aftermath of which we are continuing to deal with today. Furthermore, if DECC decides to make drastic changes to the FiT rates, industry-funded consumer protection bodies, such as RECC, will not exist in the future without the sector to support it. The result will be that there will be no organisation protecting consumers in the renewable energy sector. The burden will fall on DECC.

RECC’s response is confined to the small-scale <10 kW installed capacity solar PV systems, primarily installed in domestic consumers’ premises. In reality the domestic consumer sector is confined to <4 kW installed capacity, and so this is the principal focus of our response.

<b>Section of response</b>	<b>Contents of response</b>	<b>Page number</b>
Part 1	REA’s response to DECC’s consultation	4
Part 2	Consumer detriment	5
Part 3	Assumptions set out in the Impact Assessment	14

## PART 1: SUMMARY OF REA’S RESPONSE TO DECC’S CONSULTATION

RECC supports REA’s conclusion that the £7 million DECC is proposing for solar PV will be insufficient to support the solar PV industry and maintain the employment and supply chains that have developed over the last 5 years. Current domestic installations are currently at around 20,000 installs in an average quarter. The proposed reduction in instalments down to the 5,000-6,000 per quarter thus represents a cut of 75% to the industry. Based on the assumptions used for solar PV in the IA, REA suspects that there could be wider flaws in the methodology used to allocate the fund between the technologies.

REA urges Government to make funds available to the Levy Control Framework (LCF) beyond the total of £75-100 million budget proposed over three years. This would allow for higher tariffs to enable the solar PV industry to reach grid-parity quickly and prepare for a smooth transition away from subsidies. Even within the £75-100 million budget proposed over three years REA suggests that the available funds could be much better allocated so as to support domestic solar PV deployment and community projects. REA considers that the FiT scheme is no longer the most appropriate form of support for installations >10kW deployment of which should, rather, be supported through the tax system.

If the budget were reallocated in this way, REA proposes that the FiT rates for <10kW solar PV and community projects could then be increased to 5.6p/kWh. Using the central load factor for the Midlands and RECC mean system costs over 20 years, this would give an RoI at the low end of the state aid requirements but considerably higher than the rates currently being proposed by DECC. REA members see this as a much more appropriate and realistic rate. Whilst still representing a significant drop on the current tariff, it would allow deployment to continue close to the capacity levels being proposed.

REA would like to see the funding that would have been allocated to larger schemes under the FIT scheme, diverted to domestic installations, via an increase in the tariffs available. If the overall budget for solar PV were doubled this would allow for increased quarterly deployment as well as the proposed increased FiT rate. The FiT rates REA is proposing for <10 kW solar PV are shown below, along with the total this would cost the LCF, based on the proposed quarterly caps. It can be seen that there is no additional cost compared to the FiT rates DECC is proposing in Option 2 of the consultation.

REA Proposed Tariffs													
	Jan-16	Apr-16	Jul-16	Oct-16	Jan-17	Apr-17	Jul-17	Oct-17	Jan-18	Apr-18	Jul-18	Oct-18	Jan-19
<10kW	£0.056	£0.052	£0.048	£0.043	£0.039	£0.035	£0.032	£0.028	£0.024	£0.021	£0.018	£0.014	£0.011

Totals
£7,267,900

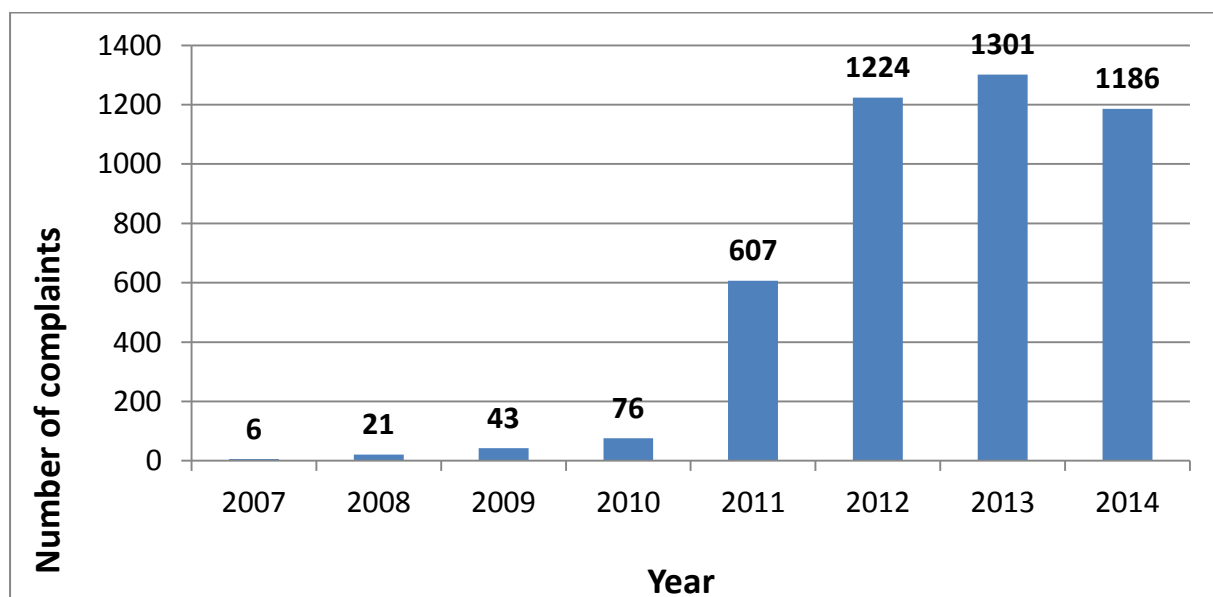
## PART 2: LEVEL OF CONSUMER DETRIMENT IN THE SECTOR

During 2011 RECC started to see a sharp increase in its membership as a growing number of companies entered the solar PV sector some of whose business models relied on high pressure selling tactics. When DECC proposed a 50% cut in the solar PV FIT tariff in October 2011 many of these companies, and others, engaged in three months of frenetic activity designed to sell as many solar PV systems as possible before the rate changed, which it eventually did in March 2012. The legal uncertainty surrounding this process only exacerbated the frenzy in the sector, fuelled also by consumers keen to beat the deadline. During this period many consumers signed up to contracts hastily without understanding that they were paying over the odds and that they would never reap the benefits they had been led to believe they would.

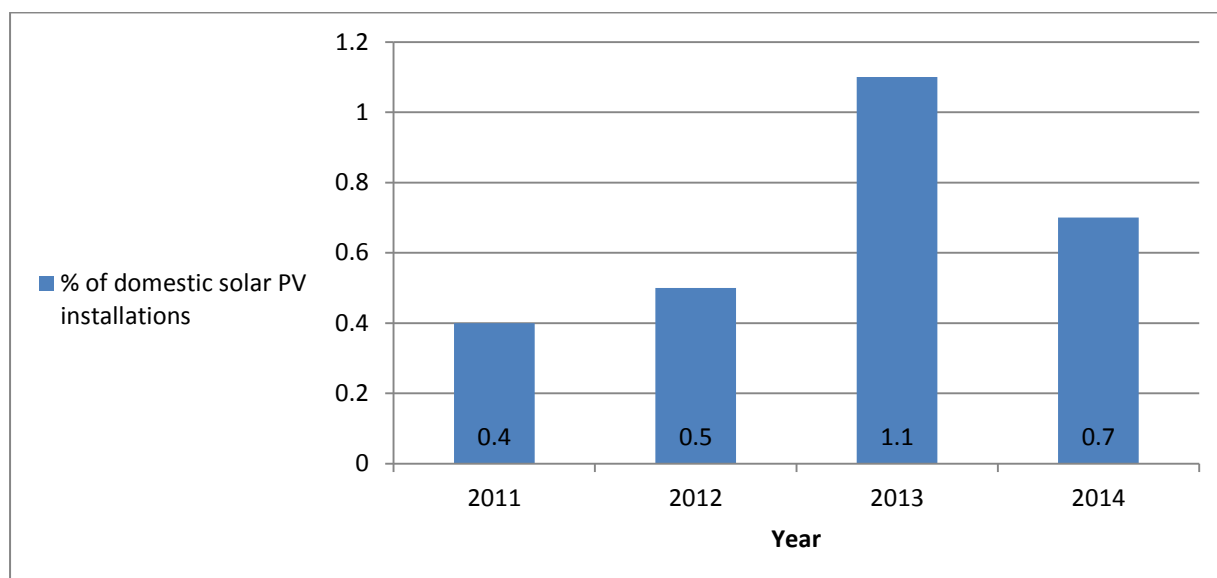
RECC is still recovering from the effects of this dramatic cut in the FIT rate in 2011/2012. The cut resulted in a very high level of consumer detriment: not only did many consumers pay over the odds for systems, but many were installed in unsuitable locations and did not deliver the expected output; others were never installed at all, despite having been paid for; while others were faulty and/or very poorly installed. DECC and MCS identified a high number of fraudulent installations at the time, and many others certainly went undetected.

Complaints registered with RECC by consumers rose dramatically in 2012, and remain at much the same level today – typically they lag installations by one or more years, up to a period of five or six years which is the legal limit of liability now set out in the Consumer Rights Act 2015. These figures are the tip of the iceberg since they do not take account of those complaints registered with Citizens Advice, Trading Standards Financial Ombudsman Scheme or other bodies, or indeed never reported at all. (See the charts below.)

### Complaints registered with RECC by year



## Solar PV complaints as a percentage of domestic installations by year<sup>2</sup>



## Complaints registered with RECC in 2014 by most common issue<sup>3</sup>

Issues complained about	Number of complaints
After sales issues	475
Estimates/ Quotes	310
Marketing and selling	290
MCS technical issues	275
Contracts and cancellation rights	240

Following the cut in the FIT rate in 2011/2012 the solar PV industry started to consolidate and many companies left the sector. A number of these companies went into voluntary liquidation, leaving consumers owed money or else with nowhere to turn to resolve their complaints. Frequently directors of these companies started new ventures, transferring the assets from their former companies, but divesting themselves of all of the attendant liabilities. RECC is very concerned that

<sup>2</sup> These are the actual figures which are represented in the bar chart above:

- in 2014 0.7% of all domestic solar PV installations were the subject of a complaint registered with RECC (754 out of 110,120 (406 MW));
- in 2013 1.1% of all domestic solar PV installations were the subject of a complaint registered with RECC (937 out of 85,755 (313 MW));
- in 2012 0.5% of all domestic solar PV installations were the subject of a complaint registered with RECC (1,051 out of a total of 201,178 (687 MW));
- in 2011 0.4% of all domestic solar PV installations were the subject of a complaint registered with RECC (439 out of a total of 124,385 (381 MW)).

<sup>3</sup> Some complaints are about more than one issue.

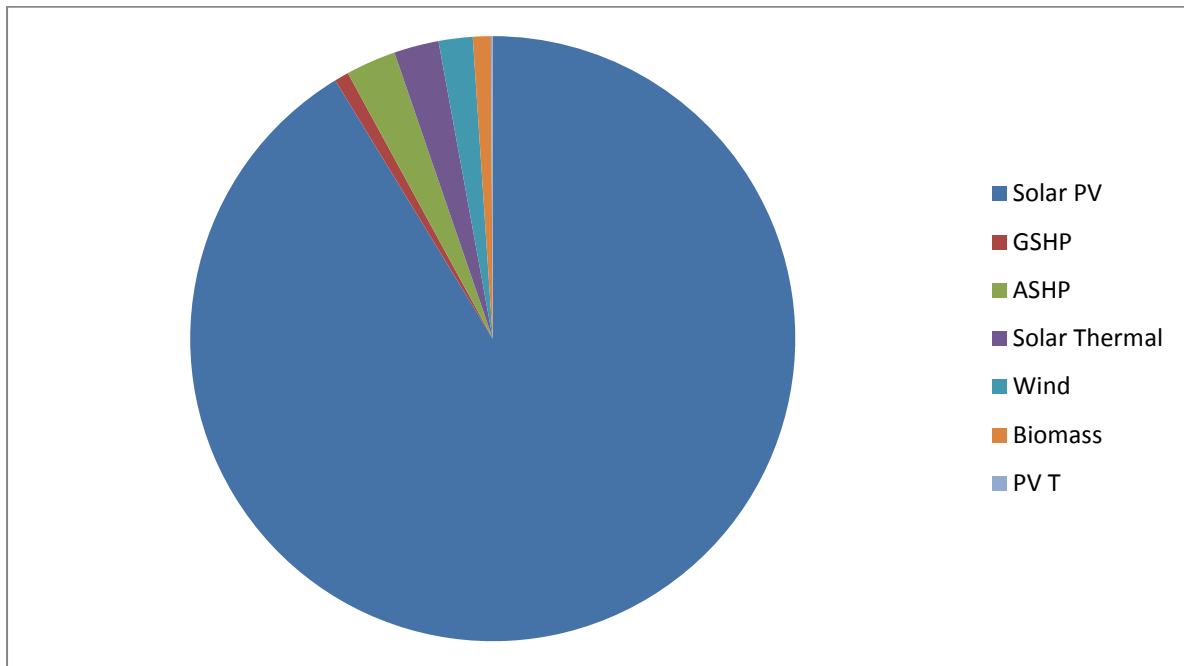
DECC does not appear to have any institutional memory of these chaotic events, nor does it appear to have factored consumer detriment into its IA at all, even as a 'non-monetised cost'. Yet the cut in the FiT rate being proposed under Option 2 is almost twice as large as that one: 87% compared with 50%.

Taking account of our past experience RECC is convinced that there will be three months of very high-pressure selling leading up to the likely cliff face in early 2016. Indeed it has already started. Consumers are already being urged once again to act quickly to beat the FITs deadline with the use of storage, as shown in the flyer attached in the Annexe. This period of frenzy will immediately be followed by a large number of installers going into voluntary liquidation, including many of those which have generated multiple contracts using high-pressure sales tactics. This will result in consumers who have faulty installations or who find themselves owed money unable to seek any redress. DECC must take steps to ensure that it puts in place a large complaints-handling capability to cope with the fallout that will certainly result from the cuts being proposed. It will be for Government to fill this role going forward. Complaints are likely to lag the cut by one to three years.

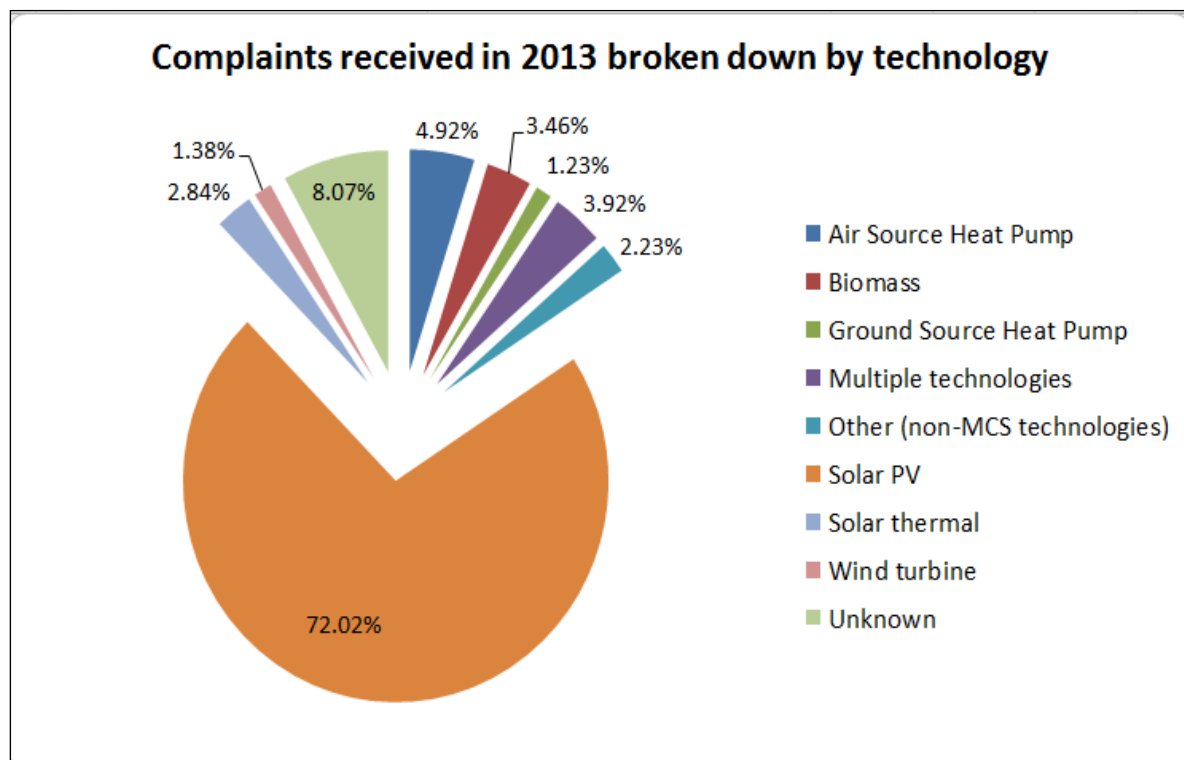
The impacts of the changes of 2011/2012 are set out below in more detail. RECC would like to place it on record that at the time we received no public funding or any other assistance for the enormous amount of additional work we were forced to engage in to pick up the pieces from these chaotic events which we had warned about in advance, and which were not of our making. We were obliged to double our staff members while our resources, solely derived from members, were reducing in line with the consolidation in the market. We now have 10 people employed simply to resolve complaints in the sector, up from 2 in 2011/2012, and this does not take account of those employed by the MCS Certification Bodies for the same purpose. As an industry-funded consumer protection body we will not be in a position to maintain our role if DECC implements the FiT rate reductions it is proposing.

The charts which follow show the breakdown of complaints registered with RECC by technology. Solar PV accounts for the vast majority of those complaints, albeit a reducing proportion in 2014 (64%) compared with 2013 (72%) and 2012 (85%), immediately following chaos of the cut to the FiT rate in 2011/2012 (and before the introduction of the domestic Renewable Heat Incentive in 2014).

**Complaints registered with RECC in 2012 by technology**

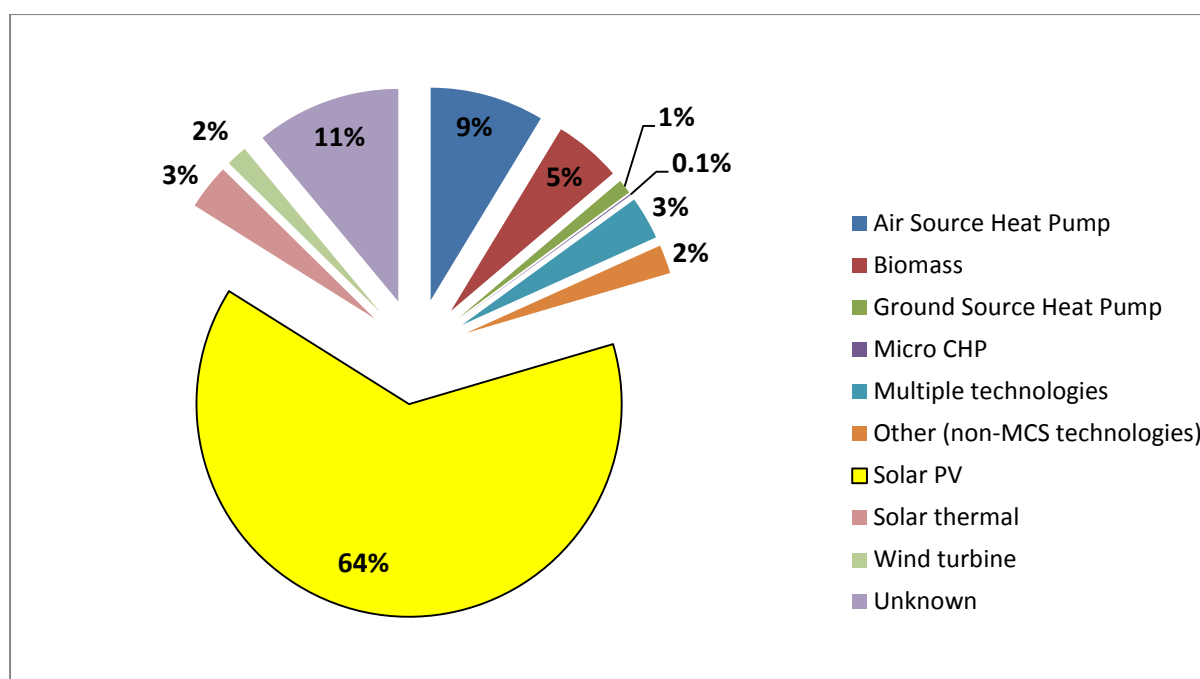


**Complaints registered with RECC in 2013 by technology**





### Complaints registered with RECC in 2014 by technology

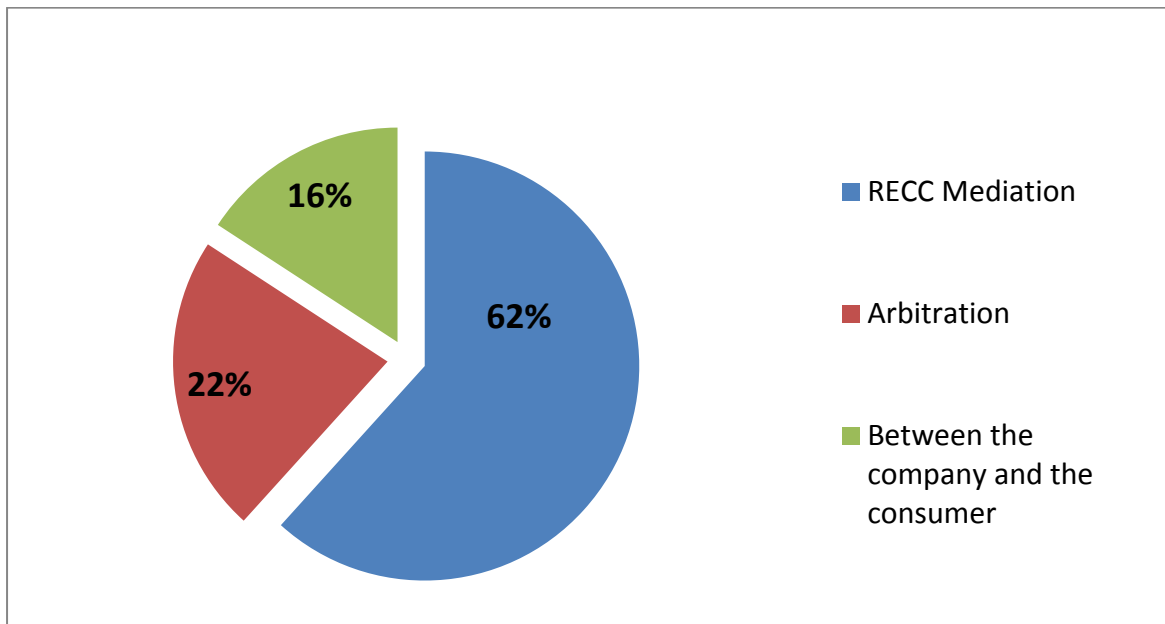


### Complaints registered with RECC in 2014 by technology, compared with 2013 and 2012

Technology	Complaints in 2014	Complaints in 2013	Complaints in 2012
Air source heat pump	103	64	32
Biomass	61	45	11
Ground source heat pump	13	16	11
Micro CHP	1	-	-
Multiple technologies	39	51	17
Other (non-MCS)	26	29	3
Solar PV	754	937	1,038
Solar thermal	41	37	27
Unknown	131	104	65
Wind turbine	19	18	22

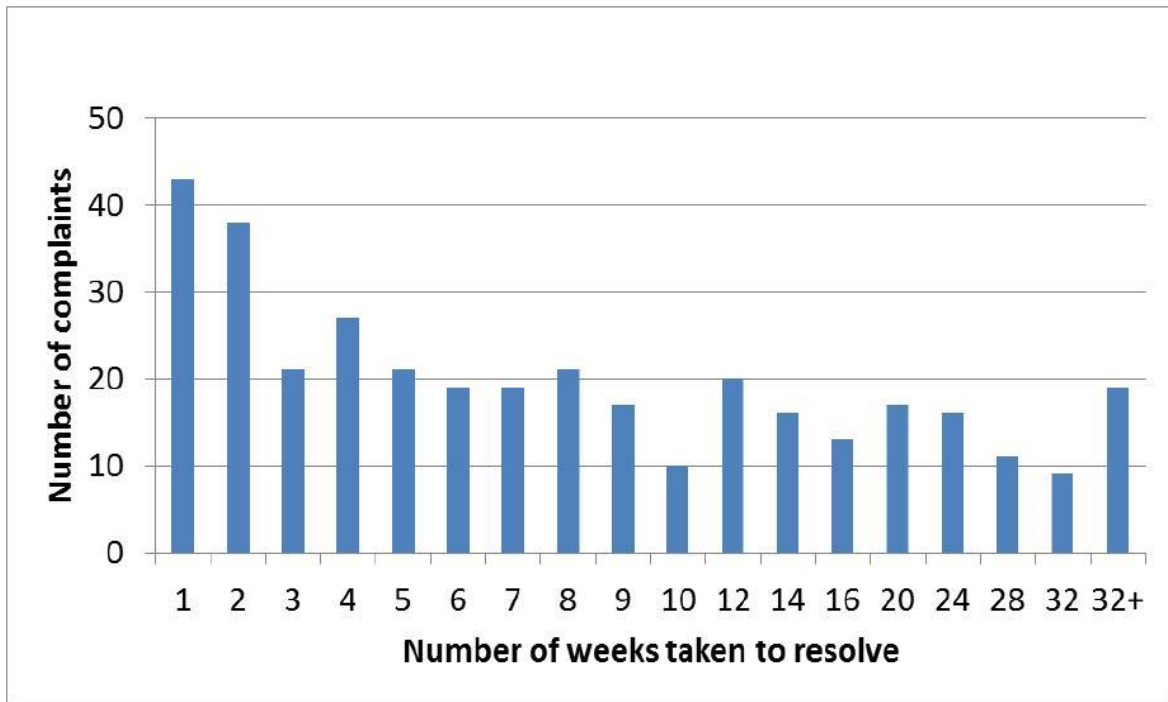
The chart below provides some insight into the work involved in resolving complaints. In 2014 RECC succeeded in resolving 62% of complaints which fell within its remit by means of its dedicated dispute resolution case workers. This is a time-consuming, and expensive, process in which case workers work with both parties to broker a solution to what are often very complex complaints. On average each case worker works for 6 – 8 weeks to resolve a dispute. In those cases where no solution can be agreed consumers have access to the independent arbitration service a very low cost binding, enforceable alternative to the court system. In 2014 22% of complaints which fell within RECC’s remit were resolved by means of the independent arbitration service. RECC contributes to the cost of arbitration in order to keep the cost to consumers and members as low as possible.

**Breakdown of how complaints were resolved in 2014**

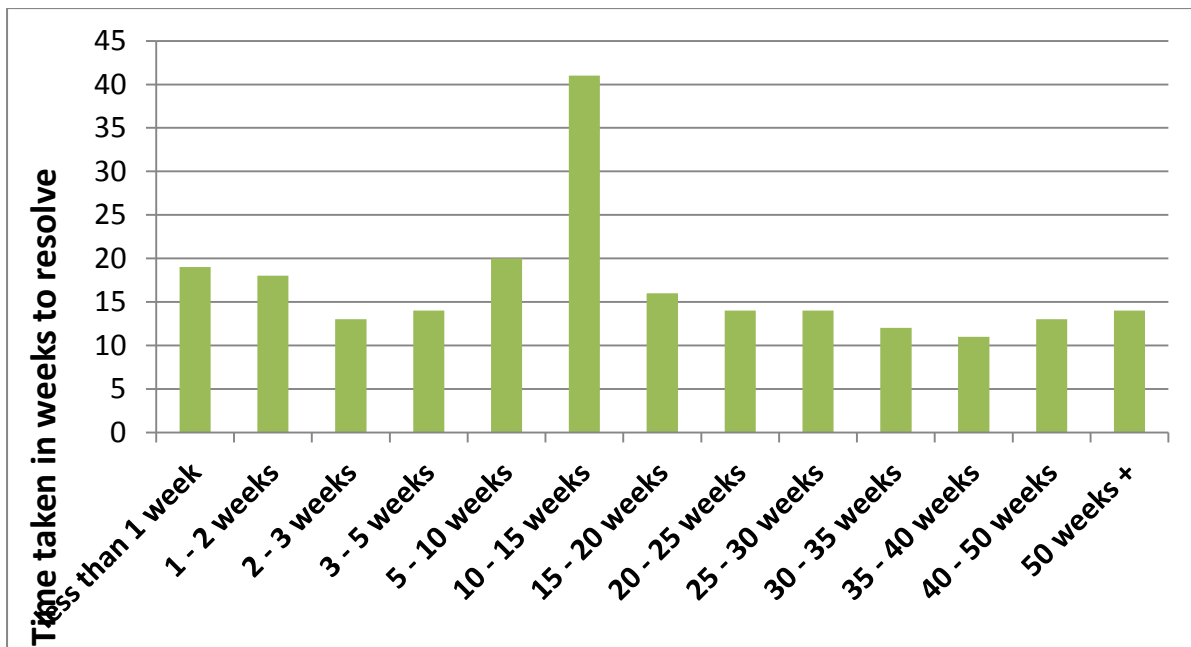


The charts below give an indication of the length of time, and thus the work involved, in resolving consumer complaints. The length of time can be driven by the technology concerned but will also be affected by many other factors, including whether or not another body is involved in the resolution. Typically this would be an MCS Certification Body, responsible for resolving complaints linked with products or the technical installation of the system. The charts show how this has changed since 2012. They reflect, in part, the increased resource RECC has put in place in order to resolve the high number of disputes it receives within a reasonable timeframe, which translates directly into costs for RECC.

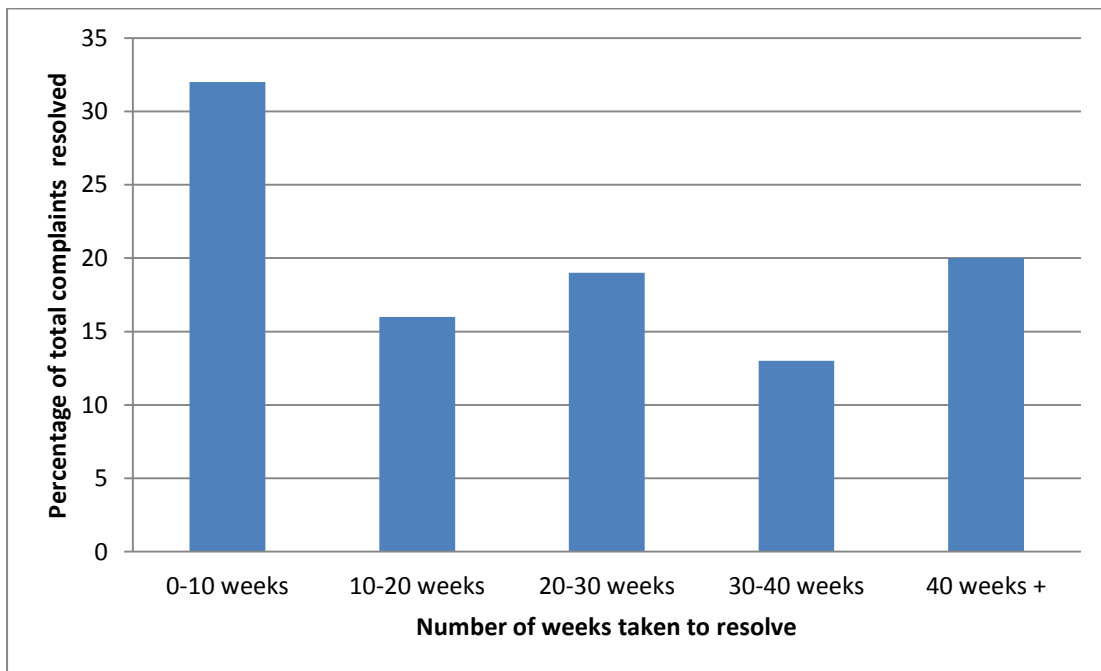
**Length of time taken to resolve complaints in 2012**



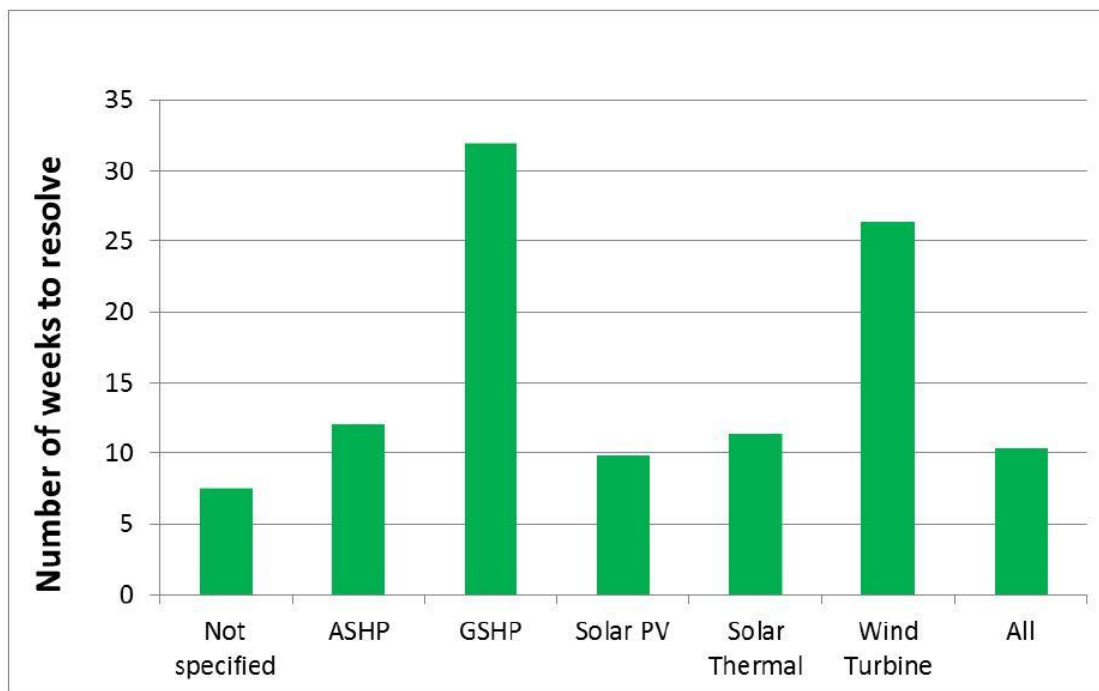
**Length of time taken to resolve complaints in 2013**



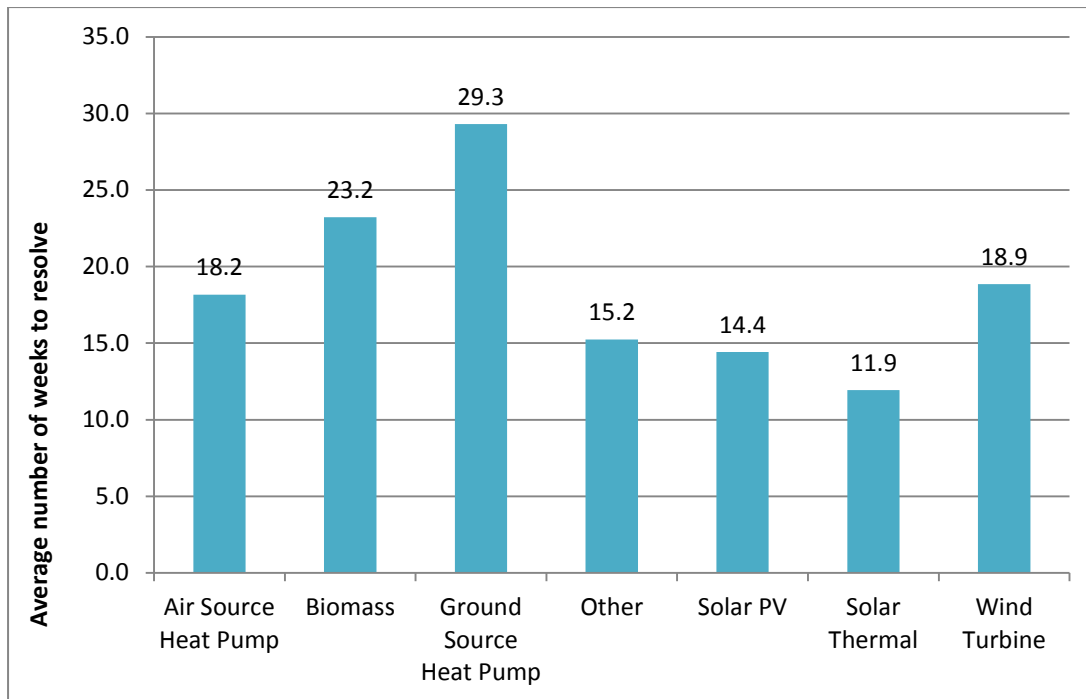
### Length of time taken to resolve complaints in 2014



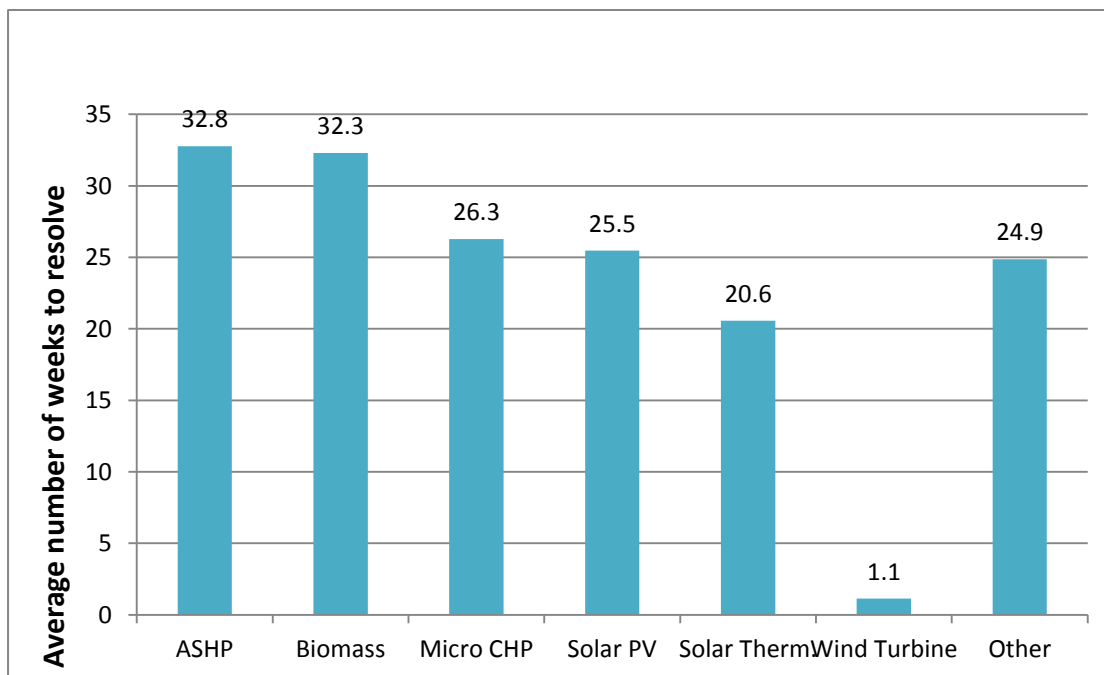
### Length of time in weeks taken to resolve complaints by technology in 2012



**Length of time in weeks taken to resolve complaints by technology in 2013**



**Length of time in weeks taken to resolve complaints by technology in 2014<sup>4</sup>**



<sup>4</sup> None of the 13 complaints registered with RECC about Ground Source Heat Pumps (GSHPs) were resolved during 2014. By the end of 2014, GSHP complaints were categorised as ongoing, referred onwards, or closed.

### **PART 3: ASSUMPTIONS SET OUT IN THE DRAFT IMPACT ASSESSMENT**

RECC notes that DECC's proposals for cutting the FiT rates for domestic solar PV are underpinned by a set of assumptions set out in the draft Impact Assessment (IA), which further draws on the work of Parsons Brinckerhoff published in August 2015.

RECC points out that there are a number of assumptions in the IA which are inaccurate, misleading or incomplete. In this section we have provided some additional data which we hope will assist DECC in making the assumptions that underpin its final decisions as accurate as possible. We are available at any time to provide additional data or explanations should it be helpful.

Our comments follow the order of the IA and we have indicated the paragraphs to which they refer.

#### **Summary: Analysis and Evidence**

In the summary sections for both Options 2 and Options 3 we consider that the following should be included as monetised costs.

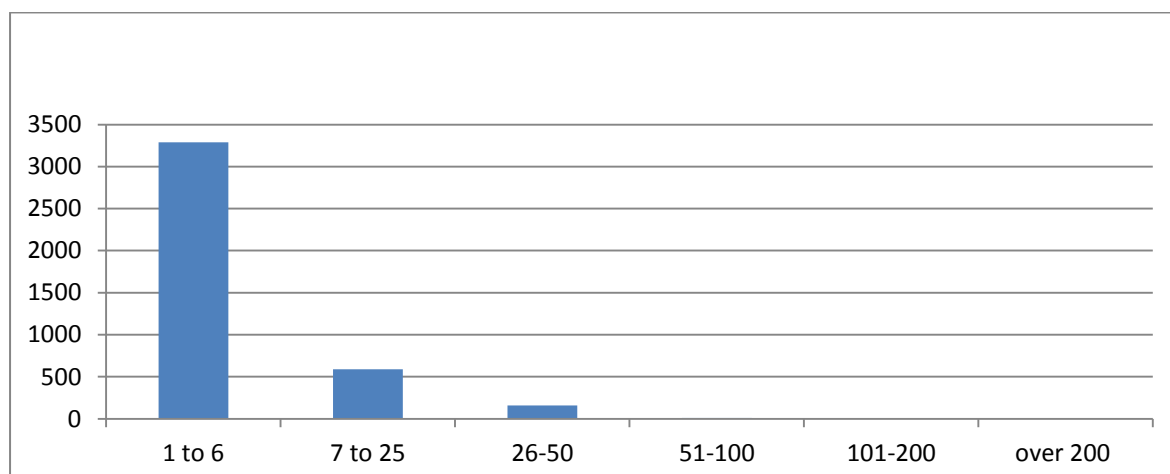
##### *Consumer detriment*

For the reasons set out above RECC would expect to see consumer detriment spelled out as another cost by 'main affected groups'. RECC is very surprised that it was not included, even as a non-monetised cost, under either Option. It would be possible to monetise the cost, based on the experience the last time the FiT rate was cut dramatically to a very short deadline. The cost of consumer detriment needs to be offset against comparatively modest savings which would be made on consumers' bills.

##### *Employment*

Currently RECC has 3,800 members. 3,000 of which are involved with selling and installing solar PV. On average, each of these members employs, directly or indirectly, 6 staff. (See chart below.) So, for the purposes of estimating the potential for job losses in the sector, and as a very rough ballpark, we would suggest that there are currently at the very least 18,000 jobs in the solar PV sector at risk. Obviously this figure does not include the wider supply chain which is dependent on the sector. These losses should be included as a monetised cost in both Options.

## RECC membership in 2014 by number of employees<sup>5</sup>



### 4. Supporting evidence

#### *Electricity price projections*

Table 13 sets out electricity price projections to 2020 at 2016 prices. A price of 17.4p/kWh for residential consumers in 2016 appears to be very high and, if relied on, will lead to widespread over-exaggeration of potential savings. RECC bases its assumptions on Government's statistical data set for annual domestic energy bills:

<https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics>

(Table: QEP 2.2.3 – see *2014 Regional Domestic Bills*)

These prices include standing charges and VAT with the risk that the average domestic rate is being confused with the average domestic total bill. This needs to be clarified. (See also our comments on 'Bill savings', below.)

### 5. Options considered

#### Option 2

RECC's comments concern the assumptions which have been used to underpin Option 2 in the proposed FiT changes. Our comments are based on < 4kWp solar PV systems, within which the domestic sector largely falls.

In particular, RECC considers that DECC has failed to take into account several very important factors which will influence the costs/ benefit profile of domestic solar PV systems. Both of these are explained in more detail below. The first is that up to 80% of domestic solar PV systems are currently

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<sup>5</sup> Membership categories correspond to the total number of employees involved in renewable energy activities, including backroom staff and sales representatives, even when these are not directly employed by the company. The membership category is verified during audit.

purchased with finance. This increases the base cost of a system by as much as 50%. There is no mention of this in the draft IA.

The second is that it will generally not be possible for domestic consumers to use 50% of the electricity they generate without some form of electricity storage system. EST estimates that 25% is more usually achievable. This means that the estimates of bill savings in the IA, already based on a very high unit cost of electricity, are likely to have been over-stated. The cost/benefit profile of storage will fundamentally alter the assumptions DECC is making about the achievable rates of return. More details of this are set out below.

#### *Value for money*

Para 5.19 states that DECC is proposing to ‘support the most cost-effective generators...’. DECC is assuming that domestic consumers are well-informed about the suitability of their site, and that their purchase decision has been based on accurate information. It is essential that assumptions are realistic and not based on unattainable real scenarios. If not there will be mis-selling and consumers will be severely misled. If systems are not well sited Government will not achieve value for money in terms of CO2 savings and consumers will not achieve the assumed RoI.

#### *Load factors*

Para 5.22 states that: ‘load factors are taken from the higher range of [Parsons Brinkerhoff] data. This reflects the [Government’s] intention of targeting well-sited installations...’ Once again, RECC considers this approach to be highly misleading. Only a minority of systems will achieve the very high load factor from SW England that is built in to the assumptions in the IA. Unless there is a clearly articulated restriction on the post codes, and the properties within those post codes, in which solar PV can be installed consumers will once again be severely misled. Government will not achieve value for money in terms of CO2 savings and consumers will not achieve the assumed RoI

#### *Capital and operating costs*

##### *i) The costs of finance*

DECC has failed to take account of the fact that some 80% of domestic solar PV installations are purchased with finance. This increases the cost of purchase by up to 50%. (See table below.) RECC has pulled together information on typical financing costs provided by two of the major finance providers operating in the sector. These two providers account for about 50% of the total lent in the solar PV sector over the last two years.

The total these two finance providers lent on domestic solar PV from 1 January 2014 to 20 October 2015 was £172,710,252. **Extrapolating from these figures, it follows that the total all finance providers have lent on domestic solar PV from 1 January 2014 to 20 October 2015 is £350 million.**



To give an idea of the amount that finance typically adds to the total cost of each solar PV system, these two finance providers have provided the following ballpark figures:

Cost of 4 kWp system bought without finance	Cost of 4 kWp system bought with finance	Interest paid	APR	Length of loan
£8,000	£12,410	£4,410	9.9%	120 months
£6,000	£9,308	£3,308	9.9%	120 months
£4,000	£6,2055	£2,205	9.9%	120 months

RECC also points out that the fact that some 80% of domestic solar PV systems are sold with finance, to a high-risk demographic which accounts for the higher than usual APR, shows that it is not well-off domestic consumers in the main who are installing solar PV systems. Rather, it is much more evenly spread across the social spectrum. This is important when considering the redistributive effects of the cost of FiT payments which is socialised across consumers' bills.

*ii) The costs and benefits of battery storage*

DECC has not included any costs of storage in the draft IA, despite having estimated that typical domestic households might use up to 50% of the electricity they generate. Usage of 50% could only be achieved in certain very specific circumstances, perhaps with the addition of some form of storage device, such as battery storage.

From RECC's research, smaller batteries (< 2kw) typically cost around £2,000 (plus the installation cost). Larger ones (< 4kw) cost £3,000 - £5,000 (plus the installation cost). Batteries will currently need to be replaced at least once every five years.

In RECC's guidance on the costs / benefits of battery storage published on the website here: <https://www.recc.org.uk/pdf/guidance-on-supplementary-solar-pv-equipment.pdf>, we conclude that:

"In purely financial terms, for the typical domestic user and at today's prices, it is unlikely that [battery systems] will they pay for themselves in their expected lifespan. However, prices are coming down and so this may change in the future.

At present battery systems cost as much as £5,000, fitted. With a life expectancy of 10 years, a £5,000 battery would have to save you an average of £500 a year at today's prices to pay for itself before it wears out, a £3,000 one £300 a year and so on.

A typical lithium 6 or 7kW battery, assuming you have enough surplus from your PV system to charge it, might output 4.5 to 5kWh. If you could achieve this all year round, then you would be getting around 1,700 kWh out of the battery. At

today's average residential electricity unit price of 16p per kWh,<sup>6</sup> that would save you around £270 a year. (Smaller systems would obviously save less).

Realistically, the savings will be (possibly considerably) less than this: they will be reduced for every day that you can't fully charge the battery (such as on short winter days). And if you have a DC-coupled battery, the savings will be offset to an extent by the loss in FIT [payments].

Of course, electricity prices may rise over the lifetime of the battery so each kWh you save would be worth more and the payback would be reduced. But that would be offset somewhat if smart meters also come in during that lifetime and the Government goes ahead with its intentions on [metering] exports."

*iii) The costs and benefits of other typical "add-ons"*

Many solar PV installers of small-scale solar PV look to improve on the potential savings of systems by wrapping up a number of "add-ons" in the price. These may include voltage optimisers, solar diversion devices and/or LEDs. This practice is likely to increase if installers are forced to diversify their offerings in the face of falling FIT rates. Once again DECC has not considered the cost / benefits of any of these "add-ons" or their effects on the viability of domestic solar PV going forward.

Typical prices for voltage optimisers and solar diversion devices are in the range of £300 - £500 including fitting. Prices for LEDs range from £5 - £20. They usually come in packs of 20. These prices are rarely transparent to the consumer, since they will be wrapped up in the total solar PV system cost, thus inflating the total solar PV system cost, and obscuring the system output and rate of return.

In RECC's guidance on the costs / benefits of voltage optimisers published on our website here: <https://www.recc.org.uk/pdf/guidance-on-supplementary-solar-pv-equipment.pdf>, we conclude that:

"Because the savings, if any, depend so much on the individual circumstances, it's hard for us to put a figure on how much you might save [with a voltage optimiser]. It might be useful, though, to consider:

- the average electricity bill for a medium-use household, according to DECC figures, is around £600;<sup>7</sup> if a VO could save 10 per cent of this, that would be worth around £60 in Year 1; if it saved 5 per cent, that's worth £30;
- any savings from a VO will reduce over time if you replace old appliances with new more energy-efficient models."

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<sup>6</sup> DECC figure, including standing charges and taxes.

<sup>7</sup> Based on 3,800kWh of electricity. A household using 5,000 kWh would pay more like £800, so a 10% saving would be worth £80, a 5% saving around £40.

Solar diversion devices aim to use surplus electricity generated by solar PV to heat water in a tank. However, only those who have a water tank and who use electricity to heat their water, will benefit in this way. In RECC’s guidance on the costs / benefits of solar diversion devices published on our website here: <https://www.recc.org.uk/pdf/guidance-on-supplementary-solar-pv-equipment.pdf>, we conclude that:

“If you are someone in a ‘best-case’ scenario for PV, living in the sunniest part of the UK, with 4kWp of solar PV installed, a perfect roof (south-facing, a roof-slope at 35-40 degrees), with 50 % of the output available to divert and with a water tank, then you will have a high output and plenty to divert. Based on you being able to divert and use all the surplus, you might save:

- around £240 - 300 annually if you currently heat your water with electricity OR
- around £70 - 90 annually if you are replacing gas

Remember the tank might not need all the surplus to get hot so that would limit your savings.”

In RECC’s guidance on the costs / benefits of light-emitting diodes (LEDs) we cite the Which? report which estimates that each 10W LED could save:

- almost £7.50 a year in electricity per 60W incandescent bulb replaced
- around £7 for each halogen bulb replaced and
- around 50p for each energy-saving bulb replaced.

For an LED that lasts 25 years, replacing a 60W bulb would save more than £180 in energy use (at current tariffs) over its lifetime. However, Which? points out that the performance of LEDs varies considerably between brand. (The full Which? results are available to Which? subscribers at [www.which.co.uk](http://www.which.co.uk).)

*iv) Capital cost of small-scale solar PV systems*

RECC regularly provides reported cost data for installed solar PV systems to DECC. Reported cost data collected over the past six months can be summarised as follows:

Month	Number of installations	Total kW installed	Total spend	Price per kW	Average contract price	Average system size
Apr-15	1,064	4142	£6,963,597	£1,680.93	£6,551	3.9
May-15	1,179	4424	£7,753,283	£1,752.47	£6,581	3.8
Jun-15	1,273	4997	£8,252,824	£1,651.29	£6,488	3.93
Jul-15	836	3238	£5,292,130	£1,634.08	£6,338	3.88

Aug-15	1,167	4512	£7,411,343	£1,642.59	£6,356	3.87
Sep-15	1,823	7194	£11,548,394	£1,605.26	£6,338	3.95

In producing a cost per Kw installed figure it is important to bear in mind that there are certain fixed costs, and that there are thus economies of scale for larger installations which will be relatively cheaper per Kw installed. The number of systems registered has increased considerably in September following DECC's consultation, and is expected to continue to increase for the next three months. RECC will continue to submit cost data to DECC as it becomes available.

*Bill savings and electricity generated*

Estimated bill savings in DECC's Option 2 appear to be calculated on the basis of 50% generated electricity used and that 50% is exported. RECC auditors only permit savings of 25% to be claimed unless there are very clear, demonstrable circumstances, e.g. the consumer is a disabled person at home all day using electricity for heating. For the majority of domestic consumers the percentage of energy generated exported is likely to be far higher than the deemed 50%. EST assumes that 25% of electricity generated is used directly in the home:

<http://www.energysavingtrust.org.uk/domestic/content/our-calculations>

RECC therefore considers that it would not be possible to use 50% of electricity generated in the absence of such special circumstances, or without some kind of storage device. But adding a storage device to a solar PV system will dramatically change the cost / benefit profile. DECC cannot make an assumption of 50% usage without taking account of these additional costs. (Further details on the cost / benefit profile of various storage devices and other "add-ons" are set out above.)



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