

Each Home Counts

An Independent Review of Consumer Advice, Protection, Standards and Enforcement for Energy Efficiency and Renewable Energy



Dr Peter Bonfield, OBE, FREng



Department for
Business, Energy
& Industrial Strategy



Department for
Communities and
Local Government

December 2016

Background

In July 2015, the Secretaries of State for the Department of Energy and Climate Change (DECC), now part of the Department for Business, Energy and Industrial Strategy (BEIS), and the Department for Communities and Local Government (DCLG) jointly commissioned an 'Independent Review of Consumer Advice, Protection, Standards and Enforcement' for home energy efficiency and renewable energy measures in the United Kingdom¹ (the Review).

This Review covers:

Consumer advice and protection

What supports consumers' decisions ahead of the installation, and what assistance is available when things go wrong?

Standards framework

What ensures that the right products are fitted to the right properties in the right way during the installation?

Monitoring and enforcement

What ensures that poor quality work is dealt with effectively, and do arrangements for audit, compliance-checking and sanctions provide sufficient assurance of this?

This Report sets out the results of the Review and proposals for development of a clear action plan for industry to lead on and deliver over the coming years.

1. www.gov.uk/government/publications/bonfield-review-terms-of-reference

Contents

Ministerial Foreword	2
----------------------	---

The Independent Review

Chair's Foreword	4
1. Vision	8
2. Why was the Review Required?	9
3. Review Approach	12
4. Summary of Recommendations	14
5. Full List of Recommendations	18
6. Implementing the Recommendations	21
7. Progress So Far	25

The View from Industry

8. Consumer Protection	30
9. Advice and Guidance	33
10. Quality and Standards	38
11. Skills and Training	41
12. Compliance and Enforcement	44
13. Insulation and Fabric	47
14. Smart Meters	51
15. Home Energy Technologies	54
16. Application to Social Housing	58

Glossary	60
----------	----

Acknowledgements	62
------------------	----

Ministerial Foreword

by Baroness Neville-Rolfe and Gavin Barwell



When we make changes to our homes, it can have an immediate impact on our lives. Whether it's replacing an ageing boiler, or fitting new insulation, home energy improvements can save money, improve our health, and make our homes warmer and more comfortable to live in.

But that will only happen if customers feel confident in the benefits they will get, and that they can trust in the quality of the advice they receive on energy saving measures and their proper installation.

Establishing a clear and robust standards framework is fundamental to achieving consumer trust and to encourage investment and promote innovation. We jointly commissioned Dr Peter Bonfield to lead this Review as we recognise the importance of addressing concerns over quality, and that the best result would be achieved through engagement with industry and consumer groups. The Each Home Counts Review has been highly active in consulting a diverse range of stakeholders, and in driving real change.

We welcome the Review as offering a clear and tangible way forward, led by industry itself. The Review shows the potential for a new approach that will increase consumer trust and help create the stability and confidence which industry needs to invest in skills and new products over the long-term.

Through the Review we are aware that a number of large private investors are looking to increase lending to the sector, but are looking for a clear and robust quality framework. This Report offers a path to achieving this. We welcome the direction of travel, facilitated by the Review, and now led by industry.

Our focus in Government, when considering possible action related to the recommendations, will be to intervene where it is necessary to create the enabling conditions in which markets can flourish. We support the intention of the Review to provide a more simple and transparent framework which should reduce the need for government intervention across the energy efficiency and renewable energy sectors.

We welcome industry's engagement in the Review and look forward to seeing their ownership of, and work in developing and implementing a framework that avoids duplication and unnecessary bureaucracy, and works within existing legal constraints on industry and with existing schemes to build on good practice so reducing cost for industry and consumers.

We extend our thanks to Peter and the industry representatives who have been involved in bringing this Review to life. Government will work with industry to understand how the sector proposes to implement the recommendations of the Review to achieve our shared goal of a simple, consumer-focused framework which underpins future long-term growth of the sector.

The Independent Review

Chair's Foreword

In July 2015, I was asked to conduct an independent review to examine and make recommendations on how consumers – families, couples and individuals – can be properly protected and advised when they install energy efficiency and renewable energy measures in their homes.



In this Report, I recommend a new approach, underpinned by strong standards and enforcement. This will bring clarity and confidence to consumers, whilst providing a simplified and certain route to

market for those companies, large and small, wishing to operate and do business in the energy efficiency and renewable energy sector in the United Kingdom. The details of this new approach have been developed together with partners from across the sector, and their perspectives and commitments are set out in The View from Industry section of this Report.

In turn, this approach will help build trust and confidence and encourage greater voluntary uptake of these measures, complementing the incentives and future requirements of government. In doing so, it will help to make investment in energy efficiency and renewable energy measures commonplace.

There are already various ways of reducing energy bills or improving warmth and comfort in homes, with traditional methods like adding insulation, changing windows and installing energy-efficient boilers. There is also a real opportunity emerging with the roll-out of smart meters (which will be offered to all households in Great Britain by the end of 2020), and new technologies like sensors that generate data and new smartphone apps which empower households to manage their energy consumption better. Renewable energy technologies, such as solar power and heat pumps are becoming more cost competitive, efficient and reliable, and will, along with battery storage, play an increasing part in helping many householders produce and store energy in their homes.

However, despite long-term energy price rises, increasing publicity and awareness of energy efficiency and renewable energy options, considerable investment by the private sector, and a number of government enabling policies, we have not seen a large scale increase in the level of public demand for these measures.

Worst of all, and despite the good intentions of the Government and activities of responsible companies, there have been too many instances of poor quality installations being made by companies who do not have the skills, quality levels or core values required to operate responsibly in this market. An example of this was highlighted in a review² by Peter Hansford, former Government Chief Construction Adviser, which focused on solid wall insulation installations and informed this Review.

In my response, my Review seeks to ensure that, in the future, conventional measures, such as insulation, always deliver the quality levels and outcomes that consumers have every right to expect, underpinned by the protection, service and advice so critical for householders. It also seeks to ensure that new opportunities offered through the roll-out of smart meters and other energy efficiency and renewable energy measures fulfil their potential in a way that informs and protects householders.

We propose establishing a quality mark for all energy efficiency and renewable energy measures.

2. www.gov.uk/government/uploads/system/uploads/attachment_data/file/476977/BIS-15-562-solid-wall-insulation-report.pdf

High-level solution

The myriad of schemes, brands, certification bodies and organisations operating across the energy efficiency and renewable energy sector give a confusing, even bewildering picture for the consumer. Who can the consumer trust?

For companies operating in the sector, which certification route should they choose? How do they know that the route they have chosen is the right one? How do they avoid the need for multiple certifications?

For the public sector, how can consumers be certain and confident that those operating under the different schemes are credible and can be trusted to do their work where driven by incentives or regulation? How can we ensure that the many different measures being installed interact with the building and each other as they should?

Our proposed solution to the above challenges is to establish a **quality mark** for all energy efficiency and renewable energy measures, and for all companies operating in this sector. Those who wish to use the quality mark will need to adhere to three key elements which, together with the quality mark, make up the new framework (the Framework):

1

A Consumer Charter which ensures that all consumers receive excellent levels of customer service, a clear redress process and guarantee protection;

2

A Code of Conduct which sets out how companies behave, operate and report, the requirements of which must be met or exceeded for the company to operate; and

3

Codes of Practice which are relevant to the installation of each measure under consideration so that the risk of poor quality installation is minimised.

Those working within this Framework will need to display the requisite skills, requirements, behaviours and competencies, including:

Technical competence required to protect life, health and safety, underpinned by regulatory powers to discipline those that fall below required competence levels;

Quality performance to ensure that measures are installed in a way that meets requirements for performance; and

Customer interfacing skills so that those operating within people's homes do so in a way that is respectful and in line with the good customer service that might reasonably be expected of them.

This high-level solution is supported by more detailed recommendations covered later in this Report. However, my view, which is shared by many of those who have worked on the Review, is that this solution is essential to clean up this sector's complex landscape, which is so confusing for consumers, and also for companies, large and small, trying to work within a long-term sustainable market. These recommendations will need to be considered carefully in light of the existing legal requirements on industry, including those relating to data protection and competition law.

The new Framework will bring better clarity and protection to all those operating in the sector, and to those benefiting from energy efficiency and renewable energy measures. It will give the private sector, companies large and small, a clear route to market, and will create a level playing-field on which to compete. As a result of the need to meet the **quality mark's** performance requirements, it will not incentivise or allow a race to the bottom by cutting costs and quality. The Framework will offer the private sector and the Government the route through which to distribute financial incentives, confident of the quality outcome for consumers that will result.

Advice provision and information sharing

Provision of impartial advice is central to the Framework proposed. Many consumers are aware of the type of actions they can take to reduce their energy bills. However, while there is a plethora of information available to the consumer on energy efficiency and renewable energy matters, it can be confusing to know where to find specific and trusted information. There are some websites which householders can access for more specific and relevant information about their property type and what measures they might deploy, although these do not always provide a link to a product or service provider or their respective proven track record. To address this, I recommend an information hub is established (the Information Hub), along with innovative promotional activities to encourage its use. The supply chain will also benefit from access to verified information and guidance materials to use in their customer engagement.

There is also a clear need for property-specific information to better inform and protect the consumer. My recommendation is to establish a data warehouse which holds relevant property-level data (the Data Warehouse). Data will be collated from existing sources, such as Energy Performance Certificate (EPC) information, where this data is freely available. Establishing this Data Warehouse will enable the provision of practical, authoritative and specific information to the consumer through tools or services, and will also support the new Framework.

The increasing number of sensors and internet-connected devices in our homes, and the roll-out of smart meters, will lead to a step change in the amount of data that will be available to consumers about their energy consumption. If properly harnessed in future, energy use in homes can be better controlled, and in more convenient ways, in order to deliver optimum efficiency and comfort.

Ofgem holds data from their monitoring programme relating to measures installed in homes. Legal restrictions exist around sharing this information. An early recommendation of this Review is that secondary legislation be put in place, so that Ofgem can share this data with other organisations responsible for enforcing quality and standards, who will need to act on it. I understand this is being considered actively by officials.

Clearly, matters around data protection need to be carefully considered and addressed, but notwithstanding this challenge, my view is that better informed householders and the supply chain are essential to protect and advise consumers in the future.

Shared ownership

My Report represents a strong, collaborative partnership among the public and private sectors and consumers, a movement that has been built during extensive engagement under the Review. This partnership has committed to take concerted action to ensure that the sector's potential for the future is fulfilled, and mistakes of the past are avoided.

It is a partnership which has been open about past successes and failures, has built a shared vision of the future, and has agreed to cooperate and operate responsibly in the future. All of this is with a focus on placing the consumer first, underpinned by standards and enforcement which protect all – householders, businesses and government.

Part of this shared ownership approach relates to collaboration between actors, including those across the private and public sectors. Smart meters is one example of how I see this collaborative approach working in the context of implementing the Review recommendations. I recommend that industry collaborate to ensure smart meters work in all homes, and that installers are trained to the appropriate level. Moreover, during smart meter and Energy Company Obligation (ECO) installations, it is important that consumers receive good practice energy efficiency advice materials, for example, in future, drawing upon the Information Hub described earlier.

While this is a report to the UK Government as a whole, I have not covered territorial issues or considered how the recommendations interact with the devolved administrations' policies, although I have had the opportunity to meet and hear views from Scotland and Wales. I commend industry to collaborate closely with the respective governments of England, Northern Ireland, Scotland and Wales to take forward the implementation of this Review.

Strong, collaborative partnership among the public and private sectors and consumers.

I have not conducted a review which seeks to place blame for redress and provide compensation for those that may have been disadvantaged in the past. However, the Government regulator, Ofgem, continues to take action against players in the wider energy sector (as a good regulator should do). Ofgem works to ensure that energy companies directly compensate consumers impacted by their poor behaviour and, where this is not possible, that the organisations can agree, by way of settling investigations with Ofgem, to provide voluntary redress funding towards third sector consumer bodies that support energy consumers in the areas linked to the initial harm. I support Ofgem's approach, and encourage them to consider how this funding can be used to further support consumers who have fallen victim to poor practice.

This Review has already created an array of outcomes across the energy efficiency and renewable energy sector. For example, a number of improved standards or schemes are being developed and better customer redress processes implemented. During this Review, a pilot project has been undertaken to bring together the safety requirements of the Health and Safety Executive (HSE) and the Gas Safe Register, with the quality and consumer interfacing requirements of TrustMark for gas work, including boiler installations. This has the potential to deliver the Review's recommendations in practice, and it is the type of collaboration that could support the roll-out for all energy efficiency and renewable energy measures in the future.

Forward look

Over the next year, my expectation is that the recommendations proposed in this Review will be developed further and implemented by setting up the new Framework.

In the second year of implementation, it is my expectation that future government schemes, like the future ECO, will be aligned with the Review's recommendations where appropriate, thus generating a wider-scale impact. There is strong support from Housing Associations, who own and manage 10% of the housing stock in England³, for the approaches recommended by this Review and a commitment, via a newly formed housing implementation board, to work with industry and government to deliver these outcomes.

Waiting in the wings are some large investors who are seeking ways to invest in energy efficiency and renewable energy measures, once the more robust Framework proposed in this Review is in place to help them better manage risks.

After two years, my expectation is that there will be a critical mass that encourages more widespread promotion to householders and which will drive them voluntarily to take up the products and services covered by the new quality mark.

However, delivering outcomes against the recommendations of this Review will require continued and serious commitment from all parties. Much is already in place, and there is strong commitment to act together over the short, medium and long-term. The proof will be in the outcomes delivered. I propose that progress towards these should be openly reported annually over at least this Parliamentary period until 2020.

This Report is an important milestone on a shared journey. An Implementation Board has been established and a Strategic Governance Board (SGB) is proposed that I hope will work together, to guide the implementation of the recommendations and to ensure that the outcomes sought are delivered and reported.

I conclude this Foreword by thanking the many people and organisations who have invested considerable time and effort in this Review, including the supporting Review Team. As a consequence, I am able to publish this Report with a high level of confidence that both volume take-up and quality delivery are achievable.

Dr Peter Bonfield, OBE, FREng

3. www.gov.uk/government/uploads/system/uploads/attachment_data/file/501065/EHS_Headline_report_2014-15.pdf

1. Vision

The recommendations in this Report will help establish a better quality and standards framework, and develop a trusted, sustainable energy efficiency and renewable energy sector with the consumer at its centre.

As a result of this Review, and the implementation of its findings, consumers will have confidence in a single, recognisable quality mark, safe in the knowledge it will:

- provide trusted advice in an understandable form;
- ensure quality installations are carried out to robust standards by skilled installers, where effective performance monitoring guarantees excellence throughout the installation process;
- provide confidence in the suitability of recommended energy efficiency and renewable energy measures made through a consistent and more complete assessment of the property; and
- provide reassurance that if things go wrong, there is a simple, fair and consumer-focused redress process to make it right.

The consumer is at the heart of this Review, but we believe the recommendations will also deliver clear benefits for the sector. It will ensure industry participants:

- have certainty from a stable and long-term framework that generates confidence to invest in new and existing products, services and processes;
- benefit from a more streamlined, deregulated approach, with less duplication and bureaucracy and simplified access to funding;

- gain access to the latest standards and best practice guidance, comprehensive and reliable data on individual properties, and enhanced training and transferable qualifications; and
- benefit from increased consumer trust in organisations operating under the quality mark and greater demand in the long-term as stronger standards ensure poor quality installers and firms are removed.

We also expect the outcomes of the Review will have a wider impact on how elements of the supply chain interact and, as a result, there will be:

- better balance between the public and private sectors, with the private sector taking on more accountability; and
- significant additional investment and lending as a result of greater confidence in the sector.

It is against this vision that the recommendations have been developed, and the success of the new Framework will be measured.

The consumer is at the heart of this Review.

2. Why was the Review Required?

This Review comes at a key time for the energy efficiency and renewable energy industry. The UK is facing a significant but exciting infrastructure challenge: the retrofit of its housing stock to meet government ambitions for fuel poverty and carbon reduction and the desire for everyone to live in warm, comfortable and energy-efficient homes.

2.1

In 2014, 11% of English households were classed as being fuel poor,⁴ with around one in five households finding it difficult to meet their heating and fuel costs⁵. Living in a cold home can have a series of detrimental effects on physical and mental health, and has been linked with ‘excess winter deaths’⁶. Focused efforts must be made to ensure these households are engaged in the right way, provided with advice that can be trusted, and that energy efficiency and renewable energy measures are installed that resolve, not exacerbate, the situation.

2.2

Given domestic buildings are responsible for approximately 23% of total UK carbon emissions⁷ and, with estimates that two-thirds of existing properties will be still standing in 2050⁸, work must begin now to address the energy efficiency of the wider property stock if UK statutory carbon targets are to be met.



2.3

Tackling these two demands represents a significant challenge. It is estimated that about 65% of English homes could benefit from energy efficiency improvements⁹. About 5.5 million homes in Great Britain lack cavity wall insulation and 92% of solid walled homes are uninsulated¹⁰. This may offer opportunities for industry to deliver huge numbers of installations over the coming years. Quantity must not be achieved at the expense of quality or consumer protection. In fact, poor quality installations can cause bigger issues than the problems they seek to solve, potentially creating detrimental health impacts on occupants, possible property damage, short-term remedial costs, and longer term damage to the industry’s reputation and consumer trust.

2.4

Meeting the challenge of reducing carbon emissions will require deployment of technologies beyond established measures, such as insulation or boilers. With the roll-out of smart meters and the introduction of new and innovative technologies, such as energy storage, renewable energy measures and smarter heating controls, how householders engage with energy is beginning to change. It is critical to understand how to seize these opportunities.

4. www.gov.uk/government/uploads/system/uploads/attachment_data/file/533241/Annual_Fuel_Poverty_Statistics_Report_2016.pdf

5. www.gov.uk/government/uploads/system/uploads/attachment_data/file/539570/Energy_report.pdf

6. <http://sticerd.lse.ac.uk/dps/case/cr/CASEREport69.pdf>

7. www.gov.uk/government/uploads/system/uploads/attachment_data/file/511698/20160331_1990-2014_UK_GHG_final_end_user_emissions_and_uncertainties.pdf

8. www.eci.ox.ac.uk/research/energy/downloads/40house/40house.pdf

9. www.gov.uk/government/uploads/system/uploads/attachment_data/file/539570/Energy_report.pdf

10. www.gov.uk/government/statistics/household-energy-efficiency-national-statistics-headline-release-november-2016

2.5

In conducting this Review, many examples of exemplary performance in installing energy efficiency measures have been highlighted, two of which are presented in the industry chapters of this Report (Bristol p.37 and Nottingham p.46). However, too often interventions are not well-targeted to suitable properties and, in a minority of cases, there is poor practice and sub-standard work being carried out. Ofgem’s Technical Monitoring Report showed that 6.9% of the almost 1.5 million measures installed during the first ECO period between January 2013 and March 2015 were inspected¹¹. Of these, 9.9% did not meet the necessary installation standards in the first instance and required additional work to be undertaken.

2.6

The majority of these failures are not thought to be due to intentional poor performance, but the result of gaps in standards or training provided. This Review seeks to address these gaps and to develop a framework of standards to minimise these failings.

2.7

A few key areas that the Review seeks to address are:

Making more of opportunities for consumer engagement

Although general awareness of ways to save energy has been increasing in recent years, awareness of specific interventions or technologies remains low¹². Too often, advice has been inconsistent and fails adequately to take account of property-specific details. This has meant householders often do not trust the advice being given or are receiving inappropriate advice or unsuitable measures for their circumstances. Key trigger points to better target advice are often missed. For example, householders moving home represents a key opportunity for consumer engagement due to the requirement to have an EPC, but a BEIS survey of a representative sample of householders showed that although 60% were aware of EPCs only 8% knew their actual property rating¹³;

Better use of property assessments

There are numerous requirements on householders to have assessments done; however, these are not always appropriate or useful. The need to reduce assessment costs has also damaged quality, as shown in the Green Deal Mystery Shopper research¹⁴. Often assessments do not consider fully the suitability of a particular measure for an individual property when making recommendations, or take into account the interaction of the proposed measure with the building or existing measures. Assessments remain an important tool, but more is needed to ensure they are done in a consistent and accurate way, at appropriate times, and take into account the whole building;

Simpler branding in the sector

There are multiple brands and quality schemes in the sector, many of which are known and trusted by the consumer. However, there is no single scheme that includes all the technologies covered by this Review. As householders will not necessarily distinguish between different measures, there is potential for confusion. The multiplicity also means that organisations looking to work across different measures are required to obtain multiple certifications, thus increasing the cost;

Improved selling practice to consumers

In recent years, there has been innovation in the financing models used to fund installations, particularly in the renewable energy sector. These innovations are likely to continue to play a key role and need to be supported. It is essential they are done properly, with clear guidelines and proper advice developed. A repeat of the 2013 findings by the Office of Fair Trading (OFT), which identified instances of poor practice towards consumers, such as the use of high-pressure sales techniques, unclear paperwork and information about cancellation rights, plus poor-quality installations, must be avoided¹⁵;



11. www.ofgem.gov.uk/sites/default/files/docs/eco1_tm_report_final_0.pdf

12. www.gov.uk/government/statistics/public-attitudes-tracking-survey-wave-17

13. www.gov.uk/government/statistics/public-attitudes-tracking-survey-wave-17

14. www.gov.uk/government/uploads/system/uploads/attachment_data/file/388197/Green_Deal_Assessment_Mystery_Shopping_FINAL_PUBLISHED.pdf

15. <http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.of.gov.uk/OFTwork/consumer-protection/campaign11-12/energy-efficiency/>

Delivering quality installations

For many technologies, such as renewable energy measures, established standards are in place now, and there has been a steady improvement in performance as these are introduced. For other technologies, such as insulation, further detailed formal standards are now to be developed to establish a complete set of standards. Those that do exist are sometimes expensive, difficult to access, complex and inconsistent. Lessons must be learned from the examples of poor performance to put together a comprehensive suite of standards that are clear to follow and reflect best practice. Similarly, there are some gaps in the required competencies, skills and training, particularly around core knowledge, such as building physics and consumer interaction;

Consistent and robust monitoring

It is vital that standards are upheld. The current requirement for on-site monitoring is inconsistent across schemes and, in some cases, insufficient. Under the present ECO scheme at least 5% of properties must be inspected, with lower requirements for other schemes. Without a single trusted approach, different organisations and compliance schemes have introduced their own monitoring, leading to potential duplication and additional bureaucracy. Findings of monitoring and audit are not always shared consistently between compliance organisations, meaning poor performers are not routinely identified, and trends in failure rates are not consistently addressed;

Improving long-term consumer protection and creating a simplified redress system

Anecdotal evidence indicates that consumers are confused by the route that would have to be taken to have their issues addressed. Numerous stakeholders have raised concerns and expressed frustration that there is no clear and simple route for consumer redress when installations go wrong. A 2015 Parliamentary debate¹⁶ highlighted cases of poor quality cavity wall insulation installations, where customers encountered issues with the 25 year guarantees provided by the Cavity Insulation Guarantee Agency (CIGA). According to the 2014/15 CIGA Annual Report, a telephone survey of 151 claimants reported that half were dissatisfied with the time it took to resolve a claim. This situation is replicated elsewhere;

Making better use of data and information

Both the Government and members of the supply chain collect significant amounts of data and information about the adoption of energy efficiency and renewable energy measures in homes in the UK. Dedicated surveys such as the English Housing Survey (EHS), regulatory requirements such as EPCs, and installation information gathered from schemes, such as ECO and the Renewable Heat Incentive (RHI), are all collected and logged. This represents a rich source of data and information that, if properly used, will provide specific information to householders, improve feedback loops on installations, improve standards over time, and reduce nuisance mass-marketing. Opening up accessibility to data and information in a more useful way, while at the same time protecting consumer privacy, is a key objective of the Review; and

Ensuring benefits of emerging technologies are realised

Numerous new and innovative technologies are being developed which offer to radically change how households interact with energy use in the home. New business models need to be developed to take advantage of these new technologies. They must be brought through into the marketplace properly to ensure a quality outcome for the consumer.

16. Westminster Hall Parliamentary debate of 3 February 2015: <https://hansard.parliament.uk/Commons/2015-02-03/debates/15020341000001/CavityWallInsulation>

3. Review Approach

Widespread evidence gathering and engagement

3.1

The Review has engaged with the supply chain, consumer protection organisations, central government, the devolved administrations and other sector players to establish a consensus on the existing problems and their causes, and some thoughts on broad solutions. We have been encouraged by industry's support for the Review's purpose, and its buy-in to build a more sustainable model for the energy efficiency and renewable energy sector.

3.2

A Review launch event in September 2015 brought together over 170 stakeholders from across the sector. Subsequently, we have held around 200 meetings and workshops, attended by organisations from a cross-section of industry. We have received additional evidence from many more (a list of approximately 410 organisations and individuals who have engaged with the Review is set out at the end of this Report).

3.3

We believe that we have captured the views of the industry as a whole, but are aware that it is not possible to engage with everyone. We recommend that an open and collaborative approach is taken for the implementation of the Review's recommendations to provide interested stakeholders with the opportunity to engage.

Developing the detailed recommendations

3.4

To develop the detailed recommendations and related roadmaps, ten workstreams (shown in Figure 1) were established, each chaired by a nominated industry lead and made up of invited industry representatives.

3.5

The six core workstreams were:

1. Consumer Protection

Led by Peter Broad, Citizens Advice;

2. Advice and Guidance

Led by Philip Sellwood, Energy Saving Trust (EST);

3. Quality and Standards

Led by Scott Steedman, British Standards Institution (BSI);

4. Skills and Training

Led by Liz Male, TrustMark;

5. Compliance and Enforcement

Led by Claire Curtis-Thomas, British Board of Agrément (BBA); and

6. Holistic Property Consideration

Led by David Adams, formerly of Willmott Dixon.

3.6

A further three workstreams were formed to cut across the six core workstreams and examine issues specific to certain key technologies:

7. Insulation and Fabric

Led by Peter Caplehorn, Construction Products Association (CPA);

8. Smart Meters

Led by Mike Short, Telefónica; and

9. Home Energy Technologies

Led by Howard Porter, British Electrotechnical and Allied Manufacturers' Association (BEAMA).

3.7

A tenth workstream on **Applying the Review to the Social Housing Sector** was led by Steve Cole, formerly of the National Housing Federation (NHF).

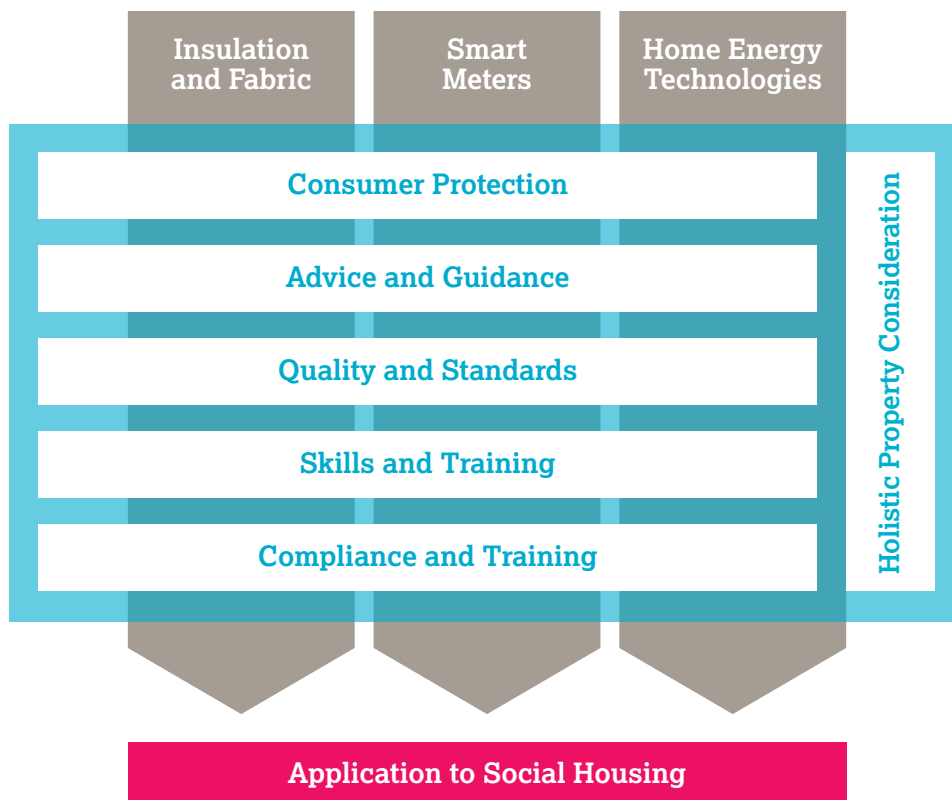
3.8

The objective of each workstream was to agree specific recommendations and to develop parts of the overall roadmap for implementation. The detailed outputs are set out in the industry chapters to this Report.

3.9

The workstreams were overseen by an Implementation Board, chaired by Peter Bonfield, with membership comprised of the workstream leads and representatives from the commissioning government departments.

Figure 1: Summary of the workstreams under the Review



4. Summary of Recommendations

This chapter sets out the key elements of the new approach proposed by the Review and some of the organisational structures that will be put in place to deliver the core components of the new Framework.

A New Framework

4.1

At the heart of the Review findings is a recommendation to establish a **quality mark** for the domestic retrofit sector. This will build further on the recognised consumer brands in the sector, such as the Gas Safe Register, TrustMark and Kitemark. It will function in a similar way to trusted consumer brands in other sectors.

4.2

This quality mark will work in conjunction with other brands, and will indicate clearly that the holder was delivering to best practice standards in the sector. This will enable the consumer, who seeks to have retrofit work done to their property, to know instantly what to look for to receive high-quality installations or advice. Moreover, it will provide comfort to the consumer in the knowledge that the quality mark is backed by strong redress and enforcement processes.

4.3

To obtain the quality mark, installers, designers and assessors will need to show that they have been certified by an **approved certification body**, and meet the requirements of three key elements of the quality mark: a **Code of Conduct**; defined **Codes of Practice and standards**; and a **Consumer Charter**.

4.4

The **Code of Conduct** will set out clear requirements and guidance on how companies behave, operate and report in order to be awarded and hold the quality mark. It will also contain the core requirements against which an organisation will be certified.

4.5

The **Consumer Charter** will cover the entire consumer journey. This charter acts as the understanding between the consumer and the organisations operating under the quality mark. It sets out the positive experience that the consumer can expect, including response times, redress processes and financial protections. It will also be the consumer-facing summary of what organisations are required to do under the Code of Conduct, and will remind consumers of their rights and responsibilities.

4.6

Installations or assessments will be undertaken in accordance with defined **Codes of Practice and standards**. These will be brought together under the umbrella of a comprehensive, overarching standards framework which builds on and incorporates existing scheme-specific standards, and includes greater emphasis on the role of design in the installation process, particularly for more complex installations or combinations of measures. As part of this, PAS 2030¹⁷, the existing framework standard for the installation of energy efficiency measures, and PAS 2031¹⁸ which specifies the requirements relating to the certification of PAS 2030 compliance, will be revised and developed further, overseen by an industry-led working group.

17. PAS 2030:2014 (Improving the energy efficiency of existing buildings. Specification for installation process, process management and service provision)

18. PAS 2031:2015 (Certification of energy efficiency measure (EEM) installation service)

4.7

Alongside these elements of the new Framework, any organisation may use the quality mark where they can show that they also satisfy the following criteria:

Provide advice to agreed standards

Advice given by holders of the quality mark will be in line with standards required by the Framework and will use resources and tools from approved peer-reviewed sources;

Are trained to a stronger, more consistent level of core competency

Installers under the quality mark will have to demonstrate that they have undertaken training which covers home energy use and the interaction between different energy efficiency and renewable energy measures. To encourage this, new core modules will be included in test specifications by training bodies, who will work together to ensure assessment against test specifications are set at more consistent levels;

Participate in a robust, transparent and aligned compliance and enforcement landscape which creates trust in the quality mark

Installers and assessors will demonstrate their compliance with the Codes of Practice and standards and Code of Conduct through an efficient and effective audit regime which has recourse to appropriate sanctions for poor performance if necessary. This will require a higher level of technical monitoring, coordinated at a national level, to ensure consistency and to reduce cost through economies-of-scale; and

Sign up to deliver a simplified and effective redress process, where consumers have a single point of consumer contact

Where necessary, this will be separate from existing regimes within certification bodies. The redress process should give consumers access to Alternative Dispute Resolution (ADR) if their problem is not resolved.

4.8

To enable this new Framework to work effectively, this Report includes a number of recommendations for the supporting infrastructure that needs to be in place, including:

A new central Information Hub that will be consumer and industry-facing, act as a collection point for best practice on standards, guidance, statistics and information approved under the Framework, and will be made available to all those certified with the quality mark. These organisations will also be able to develop services that use the information to deliver advice to consumers, allowing them a greater ability to make informed judgements on potential measures to install. We propose that the Government considers this recommendation in the review of the future of the current Energy Saving Advice Service (ESAS); and

The provision of support to this new Information Hub by making better and greater use of the data available on properties and retrofit installations. Greater data-sharing powers need to be developed, with clear reference to data protection and privacy issues. We recommend that these powers are used to allow for the creation of a Data Warehouse enabling consumers to access more accurate data and information about their homes, which can be used to provide stronger and more bespoke advice. It will also enable industry to understand better the market and to support compliance monitoring of the quality mark.

4.9

We do not intend for the recommendations proposed by the Review to reinvent existing organisations or duplicate the key roles they play, for example, the competent persons schemes which cover Building Regulations' requirements. Instead, we seek to ensure that the new Framework is complementary to the work they do. Therefore, certification will continue much in the same manner for installers as it does now; however, the quality mark requirements will drive a higher minimum standard, where required, to protect consumers.

The quality mark will indicate clearly that the holder delivers to best practice standards in the sector.

4.10

For companies obtaining the quality mark, their certification bodies will still maintain the role of certifying organisations and act as a point of contact for redress, where appropriate. However, under the new Framework, there may be some consolidation of functions where bureaucracy can be reduced, thereby improving performance or reducing costs. It is anticipated that over time the Framework will become self-financing.

4.11

We propose that the elements of the quality mark be overseen by a Strategic Governance Board made up of industry, consumer protection organisations, and government. Support to this board would be provided by an organisation known as the Service Organisation. The role of the Service Organisation will be to undertake some day-to-day functions of the quality mark. There will be a cost attached to this, but the overall cost to firms operating under the Framework should not increase from current levels due to benefits of reduced bureaucracy.

4.12

The Strategic Governance Board is expected to:

Hold overall responsibility for the elements of the quality mark and its continuing development; and

Define the Framework Operating Requirements (FOR) against which participating certifying bodies and schemes will be approved. The FOR will set out the requirements of the quality mark (including the detailed definitions of the Code of Conduct, Consumer Charter, and Codes of Practice and standards).

It will also specify the requirements for organisations who wish to accredit and certify firms and individuals against the quality mark, including the level of auditing required.

4.13

The precise details of the functions and funding of the Service Organisation need to be developed further, but may include:

Ownership, management and licensing of the quality mark, including holding a register of schemes and organisations which have been certified against the quality mark, and rules on how the quality mark may be used for marketing purposes;

Auditing those delivering the quality mark, including both companies who hold the mark and scheme operators, such as certification bodies and the consumer codes that wish to act as scheme providers under the Framework;

Ensuring information received from auditing and redress processes is used to provide feedback to training bodies on emerging training and capacity-building needs in the sector; and

Commissioning, adopting, monitoring, and reviewing new Codes of Practice and standards, in conjunction with the Retrofit Standards Task Group, created as part of the Quality and Standards workstream.

Ensure greater consistency
across the industry.

4.14

Figure 2 outlines how the new Framework will interact with its various elements.

4.15

As well as a quality mark and supporting Framework, the new approach will require a number of other changes in how industry works together, including:

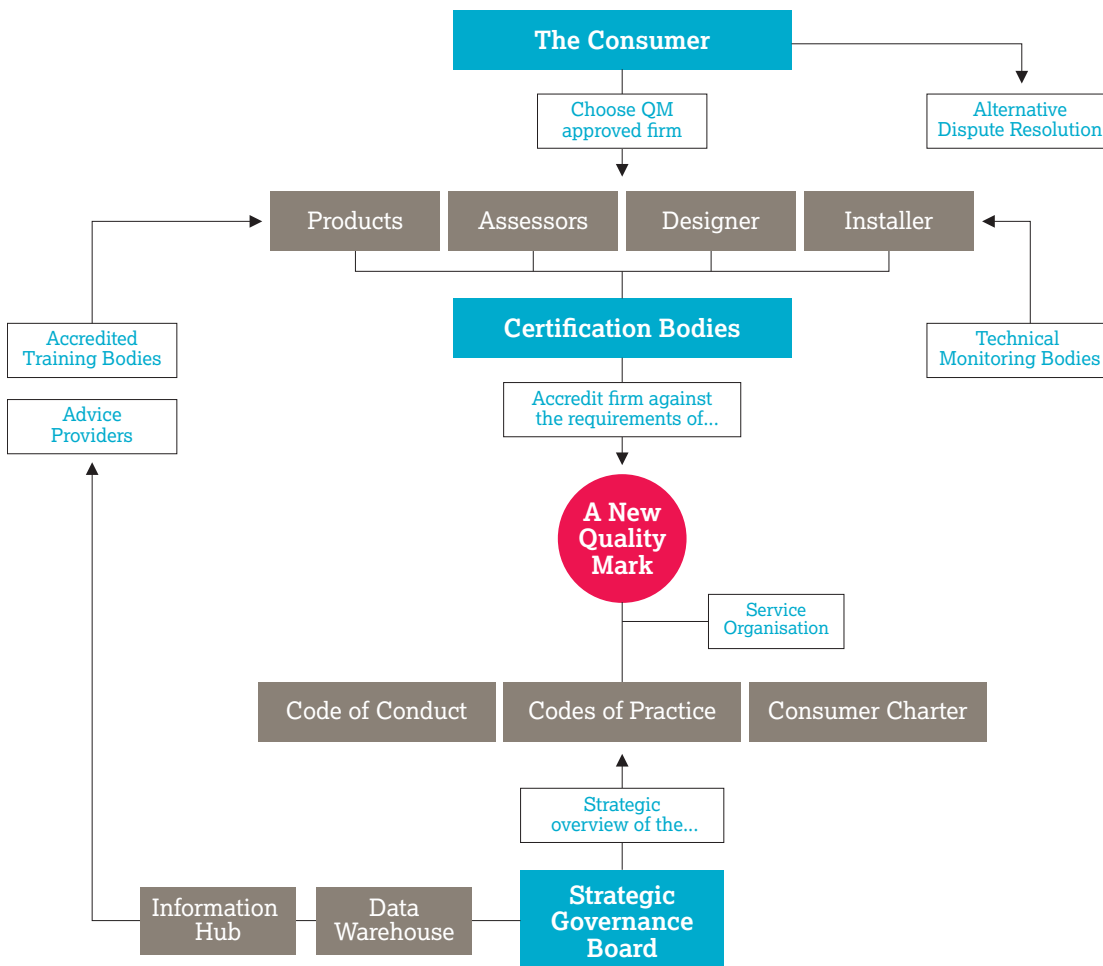
A better balance of responsibilities between the public and private sectors

Industry needs to take greater ownership of ensuring quality, setting the future direction for the energy efficiency and renewable energy sector by working together to have a clear, consistent and robust certification route, and to deliver better skills and ensure quality work is protected by stronger

enforcement. In return for this, the Government can have greater confidence in the sector, simplifying its schemes, where appropriate, to help reduce administrative burdens of delivery; and

The Framework must also function to **ensure greater consistency across the industry**, bringing new and existing technologies together to formulate a more unified solution. This will allow learning from best practices and past mistakes to improve the overall picture. Continuation of the Implementation Board, set up during the Review, and establishing the associated governance of the Framework will be key transitional elements. More importantly, the informal links between organisations established through the Review must be built upon and strengthened.

Figure 2: Core components of the Framework



5. Full List of Recommendations

The following is a full list of the industry-led individual recommendations proposed by the industry workstreams which supplement the proposed Framework. Further details on the context for these recommendations and implementation are set out in The View from Industry section of this Report.

Cross-Cutting Recommendations

Consumer Protection

Recommendation 1

Develop a set of minimum requirements for a Code of Conduct for all organisations that wish to gain the quality mark, including agreed requirements on issues such as sales practices, better pre-contractual information, and a requirement for appropriate financial protections for installations.

Recommendation 2

From the Code of Conduct, write a clear Consumer Charter setting out what a household can expect from organisations across the energy efficiency and renewable energy sector covering the entire consumer journey.

Recommendation 3

Ensure the quality mark is easily recognised by consumers as providing appropriate protection and effective signposting to reliable organisations that meet its requirements through sustained promotion.

Recommendation 4

Put in place a consistent and fair redress process, including providing a single point of contact for consumers, with the capability to support vulnerable consumers, an agreed standard for complaint handling, and access to ADR.

Advice and Guidance

Recommendation 5

Develop new approaches for engaging consumers with energy efficiency and renewable energy (e.g. by using trigger points and promoting the wider benefits of the measures which are valued by households), and deliver awareness-raising programmes at national and local levels.

Recommendation 6

Make available a set of impartial information and guidance to support more effective industry communications with customers and to aid consumer decision-making on installing measures, by establishing a central Information Hub (to act as a collection point for best practice advice and guidance) and a Data Warehouse (to act as a store for property-level data and information).

Recommendation 7

Develop a range of services and tools linked to the Information Hub and Data Warehouse to provide advice (both online and by telephone) and to enable engagement with all consumers, including vulnerable households, in ways most appropriate to them.

Quality and Standards

Recommendation 8

Develop an overarching standards framework document for the end-to-end delivery of retrofit of energy efficiency and renewable energy measures, building on existing standards and make it freely available (under licence) to all those installing under the new Framework.

Recommendation 9

Establish a Retrofit Standards Task Group to address the UK's standards needs in the retrofit sector in the broadest sense, i.e. including formal and non-formal standard solutions, as appropriate in the short and long-term.

Recommendation 10

Commission a research project to map existing formal and informal standards to shape and deliver a standards development programme for retrofit.

Skills and Training

Recommendation 11

Industry to begin to embed core knowledge, including basic building physics, design stage and consumer interaction into all relevant vocational and professional pathways, including qualifications, training courses and apprenticeships.

Recommendation 12

Improve the way in which businesses are assessed for 'competence', acknowledging the correct mix of skills, knowledge and experience for all roles; and back this up with a consistent assessment strategy and Approach to recognising Prior Experiential Learning (APEL).

Recommendation 13

Establish a process for greater collaboration within the skills sector to ensure that the appropriate skills and knowledge are properly and consistently integrated across the sector and are available for all.

Compliance and Enforcement

Recommendation 14

Develop, deliver and maintain a strong consumer-facing brand in the form of a new quality mark, which provides effective redress for the consumer and has a positive association with reputable products and services.

Recommendation 15

Identify or establish an organisation to develop and oversee the quality mark and facilitate activities for the day-to-day management of the quality mark, including enforcement, sanctions, technical, operational, and consumer protection related activities.

Recommendation 16

Put in place a robust and joined-up industry-wide compliance and enforcement regime coordinated nationally; share information on the quality of assessors, designers and installers to facilitate the identification and sanctioning of poor practice, as necessary; and review and align the frequency of, and mechanism for performing, technical monitoring or on-site audits, possibly introducing a random audit and risk-based approach (where the monitoring frequency is increased when poor quality installations are detected).

The recommendation is to put in place a robust and joined-up industry-wide compliance and enforcement regime.

Sector-specific Recommendations

Insulation and Fabric

Recommendation 17

All retrofit projects will have an appropriate design stage process which takes a holistic approach and adequately considers the home, its local environment, heritage, occupancy, and the householders' improvement objectives when determining suitable measures.

Recommendation 18

Put in place a process for gathering information and the design specification ahead of any installation of insulation or fabric measures; store this in the Data Warehouse for future use and to facilitate continuous improvement; and load aftercare support and quality information into the Data Warehouse following an installation.

Recommendation 19

Ensure that the Insulation and Fabric workstream feeds into the standards, skills and quality assurance development processes, and that these reflect best practice, and fully take account of the issues specific to the measures.

Smart Meters

Recommendation 20

Provide tailored home energy efficiency advice to consumers during the smart meter installation visit, and ensure key delivery partners work together to deliver a good customer journey throughout the roll-out.

Recommendation 21

Industry should work together to ensure that the capacity and skills of smart meter installers deliver a safe and efficient roll-out.

Recommendation 22

Industry should work together effectively to ensure that smart meters can be installed in as many properties as possible, regardless of property type.

Home Energy Technologies

Recommendation 23

Undertake a review of all technologies covered by the Framework to identify compatibility with the new Framework; and develop action plans for each technology, as required, to align with the new Framework.

Recommendation 24

Industry to develop a set of independent, impartial advice documents and/or web-based tools for both consumers and the supply chain covering each specific technology, where possible using existing material, and working with the organisation responsible for delivering the Information Hub.

Recommendation 25

Ensure the new Framework is sufficiently flexible to cover existing technologies and facilitate the entrance of new technologies; and develop a route map setting out the steps that new technologies will need to go through to operate under the Framework.

Recommendation 26

Industry to develop any relevant new standards, specifications and guidance covering the integration and inter-operability of home energy technologies under the Framework, and consider these as part of the standards mapping exercise recommended by the Quality and Standards workstream.

Application to Social Housing

Recommendation 27

Housing Associations will collaborate with industry and government to ensure that the Framework applies to the delivery of improvements in their housing stock, incorporating energy efficiency and renewable energy measures at scale.

6. Implementing the Recommendations

This Report marks the beginning, not the end, of the process. The proposed recommendations will need to be implemented to achieve a sustainable sector. This will take time, with continuous improvement needed in the long-term to keep up with best practice, new technologies, and changing consumer behaviours and preferences.

6.1

The impressive ambition and buy-in we have seen from the contributors to this Review must not be diminished. We have conducted the Review in an action-orientated way, seeking to achieve quick wins where possible. A number of these achievements are outlined in Chapter 7 of the Report (Progress So Far); however, these are just the start. The key actions proposed in the Next Steps section below will be developed as part of a more detailed implementation plan to realise fully the outcomes of the Review.

6.2

To achieve the Review's vision, however, will require a critical mass of installers and organisations using the Framework to make it sustainable. In the first instance, this needs to build on the continued buy-in of the energy efficiency and renewable energy sector. The Review calls on leaders within the supply chain, trade associations, product manufacturers, and large installers to embrace the development of the Framework and to encourage their members and technicians to use it.

6.3

If the supply chain is to take this step and adopt the Framework, there needs to be a reward. Conscientious organisations with the quality mark must not lose work to other organisations which are able to offer cheaper prices because of substandard work or lower quality assurance. Therefore, the Review calls on those organisations who procure energy efficiency and renewable energy measures, be it government, social landlords or private finance organisations, to require the quality mark as a pre-requisite for obtaining funding.

6.4

Implementing the recommendations will need clear and resourced governance. We, therefore, recommend that clear governance for the implementation of this Review is established with a Strategic Governance Board to oversee the strategic direction of the new Framework. The SGB will own and monitor implementation of the recommendations from the Review. Until this Strategic Governance Board is formed, the existing Implementation Board for the Review will perform this function.

The Review calls on industry leaders to embrace the development and use of the Framework



6.5

Implementation of the Review findings will address the key areas for improvement highlighted in Chapter 2, as shown in Table 1 below.

Table 1: Key recommendations addressing areas for improvement

Key area for improvement	Addressed by
Making more of opportunities for engaging consumers	An Information Hub, Data Warehouse and related services, and improved consumer engagement at trigger points
Better use of property assessments	Integration of a holistic property consideration approach into standards and training, and integration of assessment information into the Data Warehouse
Ensuring simpler branding in the sector	A new quality mark for the energy efficiency and renewable energy sector
Improving selling practices to consumers	A new Consumer Charter and Code of Conduct covering mis-selling and fraud
Delivering quality installations	Codes of Practice and standards to improve and align technical standards and skills requirements
Ensuring consistent and robust monitoring	Robust monitoring requirements in the Codes of Practice and standards
Improving long-term consumer protection and creating a simplified redress system	A new Consumer Charter and Code of Conduct to include requirements for a single point of contact for redress and guarantees
Making better use and availability of data	Improved accessibility of EPC data and use of Data Warehouse and related services
Ensuring the benefits of emerging technologies are realised	A Strategic Governance Board to assess inclusion and integration of new technologies into the Framework and its elements, including advice, skills and standards

Implementing the Review:

Consumer Protection and Demand for Energy Efficiency and Renewable Energy Measures

The new Framework covering consumer protection has the potential to **increase consumer demand** for energy efficiency and renewable energy measures by building trust and confidence in the sector.

Equally, the Framework, covering sales, performance of measures and insurance guarantees, has the potential to increase investment and lending to consumers as confidence in the quality of installations grows and risks to financiers are reduced. Borrowing costs for consumers may also be reduced as risks are better understood and mitigated within the sector.

The Framework will enable:

1. Access to consumer finance over longer terms which will allow more attractive finance packages;
2. Access to insurance and guarantees which provide robust protection to the consumer in the rare event that things go wrong with the measures installed;
3. The ability to aid Small and Medium-sized Enterprises' (SME) tradespeople to offer finance to the consumers who approach them for help; and
4. The ability to protect against lending risks thereby enabling financiers to explore fully how they can lend to a wider proportion of the UK population than current models allow.

Next Steps

Work to develop implementation plans for delivery of the recommendations outlined in this Report is the next phase of work to be undertaken. This work will be overseen by the Review's Implementation Board and then the SGB once established.

As industry moves into and leads the implementation phase, there will be an opportunity for stakeholders to provide feedback on their initial reaction to the recommendations and to provide input to the development of implementation plans. Further details on this will be available on the gov.uk website.

In the next four months

In the four months following publication, activity will focus on the development of detailed implementation plans, more specifically to:

- develop a quality mark framework;
- agree the governance structure, including the terms of reference for the SGB;
- define and agree the role of the Service Organisation;
- develop the key elements of the Framework
 - Code of Conduct
 - Consumer Charter
 - Codes of Practice and standards
 - Information Hub
 - Data Warehouse; and
- identify and develop actions to advance each of the Review recommendations.

It is intended that these plans will provide the focus and timeline for individual actions going forward to realise the vision of the Review.

Alongside the above activities, some actions relative to the Review are already being delivered. This covers, but is not limited to:

- developing and then publishing the PAS 2030 and PAS 2031 revisions in Spring 2017 ready for ECO: Help to Heat, with a consultation expected in Summer 2017;
- carrying out a standards mapping exercise and developing a plan for commissioning new or revised standards;
- establishing a Retrofit Standards Task Group; and
- scoping the future of ESAS, including how this will link to the Information Hub proposed by the Review.



7. Progress So Far

The Next Steps section in the previous chapter shows that much work is left to do. However, a number of organisations and schemes, working both inside and outside of the Review, have started to take action in line with the approach advocated by the Review:

Letters of support from industry

BEIS have received a number of letters of support for the Review from industry representatives, including product manufacturers, trade bodies, installers and financiers, conveying their willingness to back the outcomes of the Review.

Revision of PAS 2030 & 2031

The Government has committed to update PAS 2030 and 2031 which will continue to underpin the quality of ECO: Help to Heat, with a consultation expected Summer 2017. The PAS 2030 and 2031 revisions are being conducted with the Retrofit Standards Task Group, as recommended by the Quality and Standards workstream.

Implementation Board in place and informal industry groups being established

A number of industry groups have been brought together under the auspices of the Review, providing a key platform for further engagement with the sector. Along with the Implementation Board for the Review, these groups will act as a key vehicle for engagement among members of the industry.

Creation of a redress fund for Preston

E.ON are developing a project to rectify poor installations of solid wall insulation within the local area and will be in close dialogue throughout the Review's implementation to ensure that further work makes use of the best available practices, as they are defined.

TrustMark and Gas Safe Register Project

TrustMark and Gas Safe Register are undertaking a project to inform and educate gas engineers about the Consumer Rights Act 2015 and the Alternative Dispute Resolution Regulations 2015¹⁹. TrustMark will provide access to support services for non-technical issues which are outside the remit of the Gas Safe Register.

Solutions for Smart Meters

The Government response to the consultation on the delivery model and regulatory requirements for the Alternative Home Area Network was published on 27 April 2016. This will help ensure that all homes and small businesses in Great Britain can benefit from smart metering as soon as possible, and that more complex installations are managed in a cost-effective and coordinated manner.

Solid wall insulation industry guidance

The National Insulation Association and the Heating and Hotwater Industry Council have developed a new industry-wide specification which covers best practice for dealing with appliance flues, combustion air ventilators, fuel supply pipework and fittings which may be encountered during the installation of solid wall insulation. The specification will be made publicly available for use by the wider industry early in 2017.

19. Alternative Dispute Resolution for Consumer Disputes (Competent Authorities and Information) Regulations 2015

New data sharing powers

Ofgem E-Serve is seeking new powers to facilitate greater sharing of the data they hold with consumer protection bodies and organisations responsible for quality and standards of installations and advice. This data identifies poor quality energy efficiency and renewable energy installations and inaccurate EPCs.

CIGA and BBA work on pre-install property assessments

The BBA and CIGA, the leading guarantee provider for cavity wall insulation installations, have launched a scheme. The scheme requires property assessments to be independently reviewed for compliance with industry specifications to ensure that cavity wall insulation installations are only carried out on suitable properties. The pilot scheme commences in January 2017, with a full introduction in April 2017.

Greater access to EPC data

The Government published a Privacy Impact Assessment (PIA) on 1 April 2016. It revealed plans to enable more open access to EPC data held on the Energy Performance of Buildings (EPB) domestic and non-domestic registers for England and Wales²⁰. EPB data includes both domestic and non-domestic EPCs, Display Energy Certificates, and Air Conditioning Inspection Reports.

Further steps have been taken since publication of the PIA, including changes to The Energy Performance of Buildings (England and Wales) Regulations 2012. An open data release of domestic and non-domestic EPC data is planned.

Requirements for the Energy Performance of Buildings Regulations

The Government published a consultation²¹ in May 2016 on options to improve the current Scheme Operating Requirements for the EPB Regulations 2012. The consultation sets out proposals for improving the current system, by introducing smarter quality assurance procedures and other measures to improve systems to tackle poor practice and detect and prevent fraud. A government response to the consultation is expected shortly.

Moisture risks paper

The Government is working with BSI to raise awareness of the risks associated with moisture in buildings following the installation of solid wall insulation. A BSI White Paper is expected to be published shortly. The Government has also commissioned high-level practical guidance on the design and installation of external wall insulation, and may commission similar guidance on internal wall insulation.

20. www.gov.uk/government/uploads/system/uploads/attachment_data/file/510273/EPB_data_privacy_impact_assessment.pdf

21. www.gov.uk/government/uploads/system/uploads/attachment_data/file/525524/Consultation_on_Accreditation_Scheme_Operations.pdf

The View from Industry

Introduction

This Section represents the outputs of the thematic, technology-specific and social housing workstreams run as part of the Review. Each chapter sets out the context and rationale for the recommendations made, and considers how these may be implemented.

The nine chapters are as follows:

Thematic

- 8. Consumer Protection

- 9. Advice and Guidance

- 10. Quality and Standards

- 11. Skills and Training

- 12. Compliance and Enforcement

Technology Sectors

- 13. Insulation and Fabric (incorporating the Holistic Property Consideration)

- 14. Smart Meters

- 15. Home Energy Technologies

Applying the Framework

- 16. Social Housing

The proposals contained in each Industry Chapter represent the views of each workstream and should not be seen as a definitive solution. Decisions on the precise approach will be made during the implementation phase, but the suggestions set out in the industry chapters serve as a useful starting point for discussions.

Workstream Leads

The Review has been fortunate to have had the leadership and support of the following industry experts who led its ten dedicated workstreams. Their work has been invaluable to ensure that industry practices, realities and opportunities underpin the Review findings, and to charting a tangible and collective way forward. This serves as a solid foundation upon which industry may now refine and lead the implementation of the new Framework.



Peter Broad
Consumer Protection Lead

Peter is Energy Policy Manager for Citizens Advice, the UK's largest provider of independent and impartial advice and statutory champion for energy consumers.



Philip Sellwood
Advice and Guidance Lead

Philip is Chief Executive at EST, who have 23 years' experience as the principal organisation providing public advice and engagement services for home energy efficiency, renewable energy and sustainable transport.



Scott Steedman
Quality and Standards Lead

Scott is Director of Standards at the BSI, a royal charter company appointed by government to be the UK's National Standards Body. He is Vice-President of Policy for the European Committee for Standardisation (CEN) and former Vice-President of the Institution of Civil Engineers (ICE) and the Royal Academy of Engineering (RAE).



David Adams
Holistic Property Consideration Lead

David is Manufacturing Director of Melius Homes. He formerly led a team of Energy Solutions Engineers as Technical Director of Willmott Dixon Energy Services, a privately-owned company that works with local authorities, registered providers, private landlords and homeowners to deliver energy efficiency schemes in local communities.



Liz Male (MBE)
Skills and Training Lead

Liz is Chair of TrustMark, the government-backed consumer protection scheme which signposts householders to reliable local tradespeople to do work in and around the home.



Mike Short
Smart Meters Lead

Mike is Vice President of Telefónica and has held positions in the electronics and telecommunications sector for nearly four decades. He was the former elected Chair of the Global GSM Association and the UK Mobile Data Association, and a former IET President.



Claire Curtis-Thomas
Compliance and Enforcement Lead

Claire is a Chartered Engineer, and Fellow of the Institution of Mechanical Engineers (IMECHE) and the Institution of Engineering and Technology (IET). She is CEO of BBA, an independent UKAS-accredited non-profit and the UK's leading construction products certifying body.



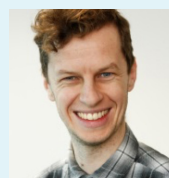
Howard Porter
Home Energy Technologies Lead

Howard is Head of BEAMA, the leading trade association representing manufacturers of electrical infrastructure products and systems from transmission through distribution to the environmental systems and services in the built environment.



Peter Caplehorn
Insulation and Fabric Lead

Peter is Policy Director and Deputy Chief Executive of CPA, the leading voice for UK manufacturers and distributors of construction products and materials.



Steve Cole
Social Housing Lead

Steve is Programme Director of London First. Prior to this, he was Policy Leader at NHF, the collective voice of affordable housing and housing associations in England. He is also a non-executive Director of Energiesprong UK.

8. Consumer Protection

Context

8.1

Consumers play a fundamental role in the renovation of the UK's housing stock through installation of energy efficiency and renewable energy measures.

8.2

By installing these measures, consumers can lower their bills and make their homes more comfortable. However, if the measure is inappropriate or the quality of work falls short, the consumer will not reap the full benefits expected and, in the worst case, end up with damage to their home and/or health.

8.3

Consumer trust is vital. Without demand for improvements from householders, the energy efficiency and renewable energy industries will face an uncertain future and society will miss a great opportunity to save energy at low cost. Ensuring a robust consumer protection framework is in place is essential to achieving this trust.

8.4

In recent years, shortcomings in consumer protection and in the quality of installation in the renewable energy and energy efficiency sector have emerged. Citizens Advice and other organisations with consumers' interests at heart have highlighted this as an area of growing concern.

8.5

Numerous codes, charters and certification schemes currently cover various aspects of the retrofit market. While many are fit-for-purpose, others are not; and they simply do not exist for some technologies. The absence of a unifying approach leads to confusion, thereby increasing consumer detriment and reducing market confidence.

8.6

However, a consistent consumer protection regime will only generate sufficient trust and confidence if it is easily recognisable by consumers as a genuine sign of a reliable organisation, and is required for relevant government schemes.

8.7

The problems addressed by this Consumer Protection workstream are in some cases severe. They can be split into three broad areas, reflecting key stages of the consumer journey:

1. Sales, marketing and contracts

The complexity of energy efficiency and renewable energy measures, and their lengthy and often uncertain payback periods, increases the risk of deliberate and unintentional mis-selling. In some cases, this has been compounded by the intricacy of government schemes, which have often added to the complexity for consumers. In the absence of clear and consistent branding, it is challenging for consumers to find appropriate impartial information to aid them in making informed choices and to identify legitimate organisations to undertake the assessment and installation;

2. Standard of work

When the quality of work falls short, there can be serious consequences for the consumer. Problems can occur in the assessment, design and installation phases. There is no single body with overall responsibility for checking the quality of work. Existing standards and the associated monitoring and sanctions regimes are fragmented, and do not appear effective in driving out low-quality work from all parts of the sector; and

3. Help if something goes wrong

Current levels of redress vary significantly between different organisations and compliance schemes. Redress processes, where they exist, can be unclear, slow and difficult for consumers to navigate. Ultimately, they may not resolve satisfactorily the consumer's complaint.

8.8

Many of the recommendations put forward by the Consumer Protection workstream to date focus on sales, marketing and contracts, the conduct of businesses and their staff, and help if something goes wrong. Elsewhere in this Report are complementary recommendations on the development of Codes of Practice and standards which will determine the technical standards of work carried out, and on the compliance monitoring and enforcement of all these requirements.

Our Recommendations

8.9

The Consumer Protection workstream envisions a future where consumers are well-advised and engaged, they can trust that any work in their homes will be finished to a high standard, and where something goes wrong, they can access a simple, fair and consumer-focused redress process.

Recommendation 1

Develop a set of minimum requirements for a Code of Conduct for all organisations that wish to gain the quality mark, including agreed requirements on issues, such as sales practices, better pre-contractual information, and a requirement for appropriate financial protections for installations.

8.10

Building on best practice in consumer empowerment and protection, and in recognising what works well in other sectors, a set of minimum requirements for a Code of Conduct will be developed. All parties in the energy efficiency and renewable energy sector wishing to benefit from the quality mark would need to meet or exceed such requirements.

**8.11**

This Code of Conduct will cover how organisations will:

- deal with the consumer at key stages of the consumer journey, including home visits, selling practices, quotes and providing pre-contractual information (such as clear model quotes with 'key facts' documents and contracts);
- manage payments, their conduct during installation, product choices, completion dates, handover procedures, post-completion customer service, guarantees, remedial works, etc.;
- provide a Single Promise Guarantee, as outlined in recommendation 4;
- handle complaints, including access to ADR;
- demonstrate a good business set up and compliance with consumer law, and maintain good trading practices, contracts and records;
- maintain and improve skills and qualifications;
- use, promote and protect the quality mark;
- maintain good communications with the consumer;
- manage sub-contracts and cooperate with others on multi-measure jobs;
- provide adequate financial protection and deal with longer-term liabilities; and
- measure consumer satisfaction.

Recommendation 2

From the Code of Conduct, write a clear Consumer Charter setting out what a household can expect from organisations across the energy efficiency and renewable energy sector covering the entire consumer journey.

8.12

A Consumer Charter will set out the minimum level of service the consumer can expect when choosing to install energy efficiency or renewable energy measures in their homes. It will cover the whole consumer journey, including how consumers should be treated by lead generators. It will spell out consumers' rights and responsibilities.

8.13

Moreover, the work on the Consumer Charter will develop Advertising Standards Authority-approved, sector-specific guidance on appropriate messaging and agreed advice and information for consumers. The workstream will work closely with the development of the Information Hub to ensure consistency of messaging.

Recommendation 3

Ensure the quality mark is easily recognised by consumers as providing appropriate protection and effective signposting to reliable organisations that meet its requirements through sustained promotion.

8.14

It is crucial that consumers perceive the quality mark as credible. Requiring the quality mark for relevant government-backed and other significant retrofit initiatives will help build consumer trust. For organisations in the energy efficiency and renewable energy sector, the quality mark should become highly valued from a business point of view.

8.15

The quality mark will be supported by a long-term promotion strategy.

8.16

Resources must be allocated to ensure intelligent and effective protection of the brand to reduce the risk of brand misuse common in many sectors and which could undermine the aim of the brand. New digital technologies and the process for intellectual property protection will be explored at an early stage. Organisations involved with the quality mark, including approved certification bodies, will be required to play their part in protecting the brand.

Recommendation 4

Put in place a consistent and fair redress process, including providing a single point of contact for consumers, with capability to support vulnerable consumers, an agreed standard for complaint handling, and access to ADR.

8.17

Through introduction of the Code of Conduct and the related process to enforce it across the sector as part of the Framework, a consistent minimum standard for redress will be established, including:

- a minimum standard for complaint-handling by organisations, with target timescales for response and resolution;
- access to ADR for redress where other routes have failed;
- a single point of contact for consumers on redress providing guidance on the redress process, with the capability to support vulnerable consumers; and
- the development of a Single Promise Guarantee to cover product, design and installation, providing a single point for consumers to access and redeem the appropriate financial protections, such as warranties or insurance-backed guarantees. The Single Promise Guarantee covers the range of losses a consumer may suffer and provides protection for the long-term through an insurance-backed guarantee or suitable alternative. This should include circumstances where the installer or manufacturer is no longer trading.

Our Action Plan**8.18**

Set up a working group to bring together industry and consumer protection interests to ensure that the protections developed meet consumer needs, are realistic across diverse industry groups, professions and trades, and are measurable and enforceable.

8.19

Through this working group:

- develop a Code of Conduct and associated guidance for industry-led consultation within six months of publication of this Report;
- develop the Consumer Charter and agreed consumer messaging; and
- oversee the development of a Single Promise Guarantee into a workable proposition within six months of the Report's publication.

8.20

Monitor and contribute to the implementation of the actions from other workstreams to ensure they align to the Consumer Protection recommendations, particularly on developing consumer information and standards of work.

Ensure the quality mark is recognised by consumers



9. Advice and Guidance

Context

9.1

Improving energy efficiency and adding renewable energy measures to homes are rarely explicit priorities for householders; however, in recent years, industry, working with academia and government, has gained an increasingly sophisticated understanding of how consumer choice can be influenced in this area.

9.2

Nevertheless, the question remains as to how industry and government can collaborate to encourage householders to choose energy efficiency and renewable energy measures, whilst maximising the effectiveness of individual companies' marketing of their products and services. The recommendations of this Advice and Guidance workstream relate to the consumer journey, from a householder's first awareness of the opportunity for energy efficiency or renewable energy measures to be installed in their home, up to the point where they contact an installer or assessor for a quote or detailed property assessment. We identify the activities that can initiate and drive the consumer journey forward, and also how to integrate these into the Framework.

The consumer journey

9.3

There are a number of journeys a consumer may take. Different households, including vulnerable consumers, will have different advice and informational needs. Most importantly, the measures covered by this Review are very diverse – ranging from buying and fitting an energy-saving lightbulb to installing a renewable energy heating system. Experience shows that householders planning more complex and less well-known solutions have more detailed needs for information, advice and guidance.

9.4

In addition, for a very high proportion of households, there is no single “consumer” for most energy-saving measures. In the 20% of all homes in England that are privately rented and the 17% rented through social

housing providers (together comprising 37% of all homes in England²²), landlords make the investment decisions, but tenants can play a role in encouraging their landlord to take action and in consenting for works to proceed. In leasehold properties, especially flats (i.e. 20% of all homes²³) decision-making processes can be complicated with freeholders and multiple leaseholders needing to agree prior to the improvements proceeding. Accurate impartial information can inform the dialogue between landlord and tenant, and between freeholder and leaseholder.

The need for impartial advice

9.5

Home owners and occupiers often do not choose or agree to energy efficiency or renewable energy measures because of a lack of engagement, awareness and trust. This is due to a number of factors including:

- difficulty consumers face in finding out about and buying new technologies where there are few companies in the market, where neighbours and friends have little experience of the products, and there is limited information available on the internet from consumers who have had these measures installed;
- consumers' lack of trust in claims or lack of understanding of how a particular measure will work in their home;
- homes are complex energy systems, with consumers struggling to understand how different measures relate to each other and which action to take first; and
- for government-supported funding schemes, consumers need a trusted route to find out about support on offer, and to verify the claims of companies involved in delivering or promoting these schemes.

22. English Housing Survey 2014 to 2015: Housing Stock Report dated 21 July 2016, available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/539600/Housing_Stock_report.pdf

23. English Housing Survey 2014 to 2015: Housing Stock Report dated 21 July 2016, available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/539600/Housing_Stock_report.pdf

9.6

In this context, impartial advice bridges the trust gap through provision of clear and accessible information about different energy-saving measures. It ensures that the energy efficiency and renewable energy market can develop as rapidly as needed to support the achievement of the Government's ambitions for reducing carbon emissions and for alleviating fuel poverty.

9.7

Impartial advice and engagement play a central role in overcoming the barriers to a well-functioning market for energy efficiency and renewable energy measures: it drives the uptake of measures at a faster rate than will be achieved by the market alone.

Our Recommendations:

Recommendation 5

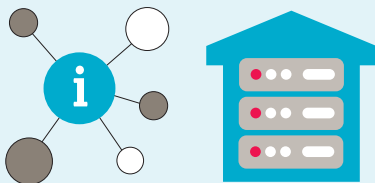
Develop new approaches for engaging consumers with energy efficiency and renewable energy (e.g. by using trigger points and promoting the wider benefits of measures which are valued by households), and deliver awareness-raising programmes at national and local levels.

9.8

Activities within engagement programmes will consist of:

Promotion of the quality mark as part of a single brand for energy efficiency and renewable energy improvements, emphasising the links to quality and trust, etc.;

Establish an
Information Hub and
Data Warehouse



New materials and programmes to engage householders at trigger points for action on installing energy efficiency and renewable energy measures. These are the times when householders are most likely to consider installing these measures:

- when consumers are planning or undertaking other (non-energy related) work in their homes, such as renovations;
- the period immediately after moving into a new home;
- wider life stage trigger points, such as having a baby or retiring; and
- when they wish to tackle cold in their home.

Development of new messaging that focuses on the benefits of different energy efficiency and renewable energy measures for the individual consumer. We need a more sophisticated approach to promoting different measures to different types of consumers, recognising that simple financial messages around energy bill savings are not always the right solution.

Recommendation 6

Make available a set of impartial information and guidance to support more effective industry communications with customers and to aid consumer decision-making on installing measures, by establishing a central Information Hub (to act as a collection point for best practice advice and guidance) and a Data Warehouse (to act as a store for property-level data and information).

9.9

A primary way in which householders engage with energy efficiency and renewable energy is through communications directly from designers, assessors, installers, manufacturers and retailers. However, often householders may encounter a trust gap as they try to balance the different claims of different companies. They are also likely to be particularly suspicious of new products. There is a need for a set of impartial information to underpin these communications. This will encompass everything from statistics on the impact of measures, through to case studies, infographics, videos and interactive online tools.

9.10

Two key elements are required to provide an impartial set of information:

1. An **Information Hub** which provides quality-assured, consistent, impartial information, statistics, resources and tools to the wider industry on energy efficiency and renewable energy measures and their installation. This information will be drawn from the wider industry or generated independently, but it will be quality-assured and verified under the new Framework. Information will include potential savings figures, case studies, data and analysis.
2. A **Data Warehouse** which consists of property-level energy-related information, drawn from key data sources across the industry. The Data Warehouse will amalgamate key data sources regarding the home and make these available to consumer advice services and information tools that can be accessed by householders and those working on their behalf. The Data Warehouse will have several other benefits including: underpinning the design, installation and quality assurance aspects of the proposed Framework; enhancing the value of EPCs as an advice tool; reducing the cost of delivering energy supplier obligations; and providing a basis for powerful macroeconomic data and analysis.

Data Privacy

The privacy of consumers' energy and household data is an essential pre-requisite for consumer confidence in future energy market developments and the take-up of smart systems and technologies.

A best practice approach is in place via a Data Access and Privacy Framework for smart metering, which was established to safeguard consumer privacy, whilst establishing proportionate access to data.

The central principle of this framework is that consumers have control over who can access their data, how often and for what purpose (except where this is required for accurate billing and other regulated activities). Energy suppliers are required to keep consumers informed about the choices available to them with regards to their consumption data. Therefore, data privacy must be a key consideration in the implementation of all Review recommendations, in line with existing legal requirements.

Recommendation 7

Develop a range of services and tools linked to the Information Hub and Data Warehouse to provide advice (both online and by telephone) and to enable engagement with all consumers, including vulnerable households, in ways most appropriate to them.

9.11

The processes for planning and installing energy efficiency and renewable energy measures are new to many householders. The consumer journey from initial engagement to installation of a measure can be unfamiliar and involve a complex maze of new information on technologies, savings, regulations, eligibility criteria, processes and trusted bodies. This is especially true for technologies that have not reached market maturity, such as solid wall insulation or heat pumps.

9.12

The Information Hub and Data Warehouse will be designed to allow a range of tools and services to be developed to enable a householder to find out more about the potential for energy improvements in their home. These will include:

Providing information about what measures have already been installed in the home: with a personalised log-in, information drawn from the Data Warehouse could be used to create an individual log book for each home;

Offering access to the home's EPC, with potential for the householder to use the EPC information to consider new measures to be installed, and to consider dynamically how different measures might impact on energy bills, the EPC rating and carbon emissions;

Facilitating the householder to assess home energy performance using an online calculator (for those households without an EPC) drawing on data about their home and similar homes;

Housing a facility for householders to check (or request a check for) information about eligibility for government schemes, such as ECO and future supplier obligations, Feed in Tariffs (FiTs) and RHI, and other schemes and funding support available in their local area; and

Providing information about policies and regulations that may impact on energy-related decisions that householders or landlords can make about their property: for example, for homes that are situated in conservation areas or for landlords about EPC minimum standards.

9.13

Vulnerable consumers may require particular support to ensure that they can access the guidance and any help available. Therefore, it is critical that no service is online only, particularly given the need to reach older people, and in recognition that 34% of UK owner-occupiers are over 65 years of age. A high proportion of UK private landlords are also retired. This demographic are key consumers for energy efficiency and renewable energy measures. However, the latest Office for National Statistics (ONS) data shows a steep drop off in internet usage in this age group, with 32% of those over 65 having never used the internet and 55% not using it daily²⁴.

9.14

There is value to be gained from a central, independent and trusted contact point, both online and supported by telephone advice, to provide a source of trustworthy basic information and case studies about different energy efficiency and renewable energy measures. This will be drawn from the Information Hub. Information related to the quality mark may also be included, for example provision of details of quality mark certified installers or details of the quality mark redress process.



Our Action Plan

9.15

Develop options for increasing consumer engagement during trigger points, both at a national and local level.

9.16

Set up an industry-led advisory committee to map current sources of information, and collate and identify gaps that need to be filled.

9.17

Establish a working group to identify the outputs and services needed and desired by consumers, including home owners, tenants, landlords and third parties, and the related datasets required. Consider data protection issues regarding different usage of data.

9.18

In the first instance, those implementing these recommendations will consider the BEIS procurement exercise for ESAS and the longer term aims of such an advice service.

Case Study: Advice and Guidance

Bristol City Council

Bristol City Council (BCC) has worked with the Sustainable Traditional Buildings Alliance (STBA) to develop consumer-facing guidance for traditional building retrofit.

'A Bristolian's Guide to Solid Wall Insulation' helps householders to understand how they use their home, how and when to consider insulating their walls, and the beneficial impacts of following a holistic or whole house approach. The guidance is supported by an online tool, providing a simple entry point to understanding a holistic approach to retrofitting their home²⁵.

To support the quality of installation, BCC have also worked with STBA to develop a series of training courses, which promote the skills and understanding required for designers and installers to undertake high quality retrofit on specific property types. This training will be linked to the Council's own future procurement process providing a Quality Assurance (Kitemark) scheme to increase confidence of householders and to ensure on-going skills improvement.

This work has been developed by BCC with its Warm Up Bristol scheme which was supported by a Green Deal Communities (GDC) grant. Warm Up Bristol is a five-year city-wide scheme with an initial focus on external insulation supported by GDC funding. BEIS support has enabled BCC to focus on developing a longer term self-sustaining financial mechanism that will allow it to provide affordable solid wall insulation solutions for householders.



Photo reprinted with permission of Bristol City Council.

25. https://issuu.com/bristolcitycouncil/docs/a_bristolian_s_guide_to_solid_wall?workerAddress=ec2-184-72-82-39.compute-1.amazonaws.com

10. Quality and Standards

Context

- 10.1** Standards are at the heart of delivering a robust, quality service to the consumer in the energy efficiency and renewable energy sector. Individual standards for a range of retrofit improvement measures currently exist and are used by designers, assessors, surveyors, and installers to ensure that the correct design, specification and procedures are followed when installing improvements in a property.
- 10.2** Whilst the majority of installations are carried out in a professional manner and to high quality, the inappropriate and poor quality delivery of a proportion of retrofit improvements has been acknowledged for some time. Causes of this include: a lack of suitably available and agreed standards and guidance covering the impact of retrofits on overall building performance; a disconnect between multiple delivery teams; and omissions in standards around the quality levels for installation.
- 10.3** Over the years, research undertaken by academia and others into some of these retrofit issues offers some potential solutions²⁶. However, as of yet, the findings have not been integrated into new or existing standards. No comprehensive picture of existing standards is available or whether there are gaps in the availability of clear and suitable guidance. This Quality and Standards workstream focuses on addressing these challenges.
- 10.4** Standards need to become better integrated, with a holistic or whole building approach²⁷ incorporated into the process. This approach helps to prevent individual aspects of home retrofit being considered in isolation (e.g. solid wall insulation or boiler replacement) which ultimately can lead to unintended consequences in overall building performance. A framework within which other relevant documents (e.g. standards and industry-agreed guidance) can function in conjunction with, and work seamlessly alongside others, is essential. Where appropriate, existing standards only relevant to new build properties may be revised to incorporate retrofit elements. In other instances, new retrofit-specific standards may be needed.
- 10.5** Availability of the right type of documents also needs to be addressed. There are numerous different retrofit-focused documents available. However, clear and simple guidance is needed alongside ready access to the right content, in the right format, and at the right time.

Our Recommendations

Recommendation 8

Develop an overarching standards framework document for the end-to-end delivery of retrofit of energy efficiency and renewable energy measures, building on existing standards and make it freely available (under licence) to all those installing under the new Framework.

Standards framework for end-to-end delivery of retrofit of energy measures



26. See Retrofit for the Future by the Technology Strategy Board 2014. May N and Griffiths G (2015) Planning responsible retrofit of traditional buildings, Sustainable Traditional Buildings Alliance, London, and C King and C Weeks Designing out unintended consequences when applying solid wall insulation (HIS 2016).

27. The 'holistic property approach' (known by some as the 'whole house' approach) considers the house as an energy system with interdependent parts, each of which affects the performance of the entire system. It also considers the occupants, site, and local climate.

10.6

The standards framework will build on existing practice, including PAS 2030 and PAS 2031. It will include standards for assessment, design, installation, and operation, and will give particular attention to commissioning and handover (i.e. the consumer interface). Areas of the installation process identified as needing immediate attention include thermal insulation detailing around corners, junctions, edges, and the interaction of retrofit measures.

10.7

The main focus of the framework of retrofit standards will be on the technical characteristics of retrofit work and the processes used to plan and carry it out. The intention is to provide a framework of technical standards to inform the design and specification of retrofit work and to assist with the management and mitigation of technical risks. The compliance of work carried out on buildings can be certified for quality assurance against such standards.

Recommendation 9

Establish a Retrofit Standards Task Group to address the UK's standards needs in the retrofit sector in the broadest sense, i.e. including formal and non-formal standard solutions, as appropriate in the short and long-term.

10.8

An impartially chaired and supported Retrofit Standards Task Group will include a balance of stakeholders from across the renewable energy and energy efficiency sector to generate consensus views acceptable to the entire retrofit community. This group will provide a link between the organisation responsible for the new quality mark and the standards development agencies. Together they would generate a coordinated suite of documents. The Retrofit Standards Task Group will have specific oversight of the standards that underpin the quality mark. This will be reflected in its terms of reference, with specific responsibilities including co-ordination of future document delivery and a 'review and approval' function around existing and new standards methodologies and solutions.

Recommendation 10

Commission a research project to map existing formal and informal standards to shape and deliver a standards development programme for retrofit.

10.9

The objective of this research is to identify existing retrofit standards, to evaluate their technical strengths and weaknesses, and to identify gaps to fill so as to achieve a comprehensive standards framework.

10.10

A gap analysis and a roadmap of standards for development will be produced. Following this analysis, an on-going standards development programme will be needed and therefore established. This standards development programme will plug the identified gaps and will amend existing standards that need revising as a priority.

10.11

This work will highlight potential research needs for standards in the energy efficiency and renewable energy sector, feeding into the wider Research & Development (R&D) landscape existing across the sector.

Our Action Plan and Progress So Far

10.12

BSI has established a Retrofit Standards Task Group, including drafting its terms of reference, appointing an industry chair and confirming its members.

10.13

Work on revising PAS 2030 and PAS 2031 is underway, with publication expected in Spring 2017.

10.14

The research project to map existing standards is being scoped out by the Retrofit Standards Task Group for delivery by April 2017. The Quality and Standards workstream will work closely with the other workstreams (i.e. the Home Energy Technologies, Smart Meters, and Insulation and Fabric workstreams) to ensure a joined-up approach and appropriate coverage across multiple measures. The research findings will define the requirements for the standards framework, generate a standards development programme, and help to prioritise delivery.



Case Study: Redress

Cavity Insulation Guarantee Agency – Consumer Action

CIGA exists to support consumers on the occasion things go wrong with cavity wall insulation.

In response to consumer feedback, CIGA has embarked upon a programme of change to show leadership in improving services for delivering industry-leading customer services to consumers of cavity wall insulation. CIGA has committed to improving the consumer experience, with their organisational and operational changes seeking to represent best practice in the sector.

As a first step, CIGA's Change Programme appointed an independent Consumer Champion, Teresa Perchard, to conduct a review of the organisation's customer services²⁸. The Consumer Champion Review was published in December 2015 and CIGA accepted and agreed to implement all its recommendations.



The changes CIGA has made to deliver the best possible quality assurance and service to its customers include:

- appointing an independent ADR provider to settle customer disputes;
- recruiting three additional non-industry non-executive directors;
- hiring additional technical staff;
- hiring a Head of Customer Services to improve complaint handling; implementing an advanced Customer Relationship Management system;
- adopting enhanced performance standards, including a target of resolving 80% of complaints within 20 days;
- publishing a best practice guide for complaint handling and revised Scheme Rules for installers to encourage better customer service;
- publishing a vulnerable person's policy;
- developing a consumer-focused corporate vision and values;
- posting quarterly complaint statistics online; and
- announcing the introduction of a new system of desktop checks and surveillance of all pre-installation surveys.

These changes are part of an on-going programme of continual improvement designed to improve transparency, governance, and quality assurance. CIGA is striving to ensure that these changes represent industry best practice, and will help to ensure consumers receive the highest standard of protection and support.

28. <https://ciga.co.uk/consumer-champion-review/>

11. Skills and Training

Context

11.1

The recommendations coming out of the Review in other areas, especially from Quality and Standards and Consumer Protection workstreams, highlight the step change in knowledge needed to drive the energy efficiency and renewable energy industry.

11.2

Driving a step change presents a significant challenge, but one that industry has met before. For example, recent years have seen the embedding of health and safety knowledge and skills into all parts of the construction industry, with education and training increasing at a rapid pace. This has been driven by increased legislation, the industry's desire to improve working practices, and by costs of and legal penalties for non-compliance. Industry now needs to do something similar for the other elements of retrofit installation.

11.3

The recommendations set out in this workstream are intended to ensure that knowledge and understanding of basic building physics, the holistic or whole property approach²⁹ to assessing homes, and effective customer interactions are embedded in all relevant training and education, across all trades and professions in this sector, at all stages of retrofit. If successful, this will lead to a better skilled workforce, higher home energy performance and greater consumer confidence.

11.4

Embedding new knowledge and understanding will be a straightforward process within the professions, thanks to the established system of Continuing Professional Development (CPD). To achieve the same integration across a very diverse range of trades, microbusinesses and SMEs in building services, renewable energy and building fabric will be more challenging, as often these rely heavily on the availability of local, inexpensive and flexible learning which fits in with the normal operation of these companies.

11.5

The number of home energy improvements and installations will help drive the availability of such courses and greater innovation in training delivery. A robust and thriving retrofit market should lead to a similarly strong training market with its own supply chain also prepared to invest in the actions that are needed.

11.6

In the meantime, the recommendations put forward in this workstream will go some way to enabling this step change to take place. The industry agrees it needs and wants to see improved skills and knowledge. Some positive initiatives are already underway, but they will only be effective if individuals and the organisations they work for take the conscious decision to ensure such underpinning knowledge and understanding is embedded into everything they do.

Our Recommendations:

Recommendation 11

Industry to begin to embed core knowledge, including basic building physics, design stage and consumer interaction into all relevant vocational and professional pathways, including qualifications, training courses and apprenticeships.

29. 'Holistic property approach' (known by some as the 'whole house' approach) considers the house as an energy system with interdependent parts, each of which affects the performance of the entire system. It also takes the occupants, site, and local climate into consideration.

11.7

Core knowledge includes: awareness and understanding of basic building physics; a holistic approach to considering the suitability of a measure and its interaction with the building and other measures; and how best to engage and interact with the consumer who needs knowledge and advice on how to achieve a successful retrofit.

11.8

Apprenticeship bodies, training and education providers, employers, industry bodies and professional groups will work together to establish the best mechanism to translate the required core knowledge into mandatory requirements and learning outcomes for each job role. Training, qualifications and apprenticeships will need updating to include this core knowledge.

11.9

This work can build on the publication of the Green Construction Board's³⁰ training guide³¹. This guide sets out the principles of sustainable building in terms that are useful for the development of content for standards, qualifications, apprenticeships and training courses. This guide aims to support the training supply chain to address gaps in current provision, thereby equipping the construction industry with the skills and knowledge needed to build sustainably, and ultimately assisting the transition to an energy-efficient and low-carbon built environment. The work should also involve close liaison with the Department for Education (DfE) and grow in line with DfE's longer term aims for skills development in the UK.

11.10

Development of a mapping service to verify all training providers' delivery against these requirements, including consistent course content, agreed assessment methodology and a 'train-the-trainer' requirement.

11.11

Those organisations looking to obtain the quality mark must undergo a meaningful assessment of the competence within their workforce against the relevant skills and knowledge criteria for the work they wish to do, with reassessment at agreed intervals thereafter.

11.12

The assessment process will be to a single robust standard, and remain at a company level, allowing flexibility in the way that businesses can demonstrate competence across their employee base and in their working partnerships with other experts.

11.13

Certification bodies and other schemes will need to monitor and assess whether the required level of knowledge is maintained within companies. They also will need to agree a consistent 'experienced worker' route (APEL), including links with colleges and training providers to allow formal recognition for workers' skills and knowledge that may not have been previously assessed or awarded credit. This will encourage the eventual move towards a fully-qualified workforce.

11.14

The continued development of career maps, timelines, online competency checking tools and training portals is needed to help businesses and individuals carry out their own assessment of their qualifications and skills against the agreed consolidated criteria for key roles.

11.15

There will be clear communication and feedback loops between certification bodies, training and education providers, and the quality assurance and technical monitoring functions of the new Framework. This will facilitate improved signposting to training where necessary.

Recommendation 12

Improve the way in which businesses are assessed for 'competence', acknowledging the correct mix of skills, knowledge and experience for all roles; and back this up with a consistent assessment strategy and Approach to recognising Prior Experiential Learning (APEL).

30. The Green Construction Board was established in October 2011 as a consultative forum for government and the UK design, construction, property and infrastructure industry. The Board manages the sustainability workstream of the Construction Leadership Council.

31. <http://greenconstructionboard.org/index.php/11-general/joomla-promo/316-communications>

11.16

CPD will be stipulated for anyone who wishes to maintain a specialist qualification. Improved training and technical CPD also should be required for trainers themselves, especially college tutors and lecturers who may not have had recent direct experience as practitioners.

Recommendation 13

Establish a process for greater collaboration within the skills sector to ensure that the appropriate skills and knowledge are properly and consistently integrated across the sector and are available for all.

11.17

Employers and practitioners will be more closely involved with colleges, training providers and qualification bodies in developing qualifications and apprenticeships with the required skills, knowledge and experience.

11.18

Greater collaboration is required among training and education providers and manufacturers. This will most likely be through manufacturer associations who can take a more generic, best practice approach to products or new technologies, and can develop a suite of white-labelled materials. Many manufacturers' training courses are not currently listed as 'recognised courses', but will be mapped to see where they meet the requirements, amended if necessary and then actively promoted to the industry.

11.19

Through greater collaboration, there also are opportunities to increase the availability of specialist skills training and qualifications at Level 4³² and above. Most existing qualifications in the sector are set at Levels 2 and 3.

Acknowledge the correct mix of skills, knowledge and experience for business and back up with consistent assessment strategy



Our Action Plan

11.20

Work with the Green Construction Board and others to agree:

- the roles within the energy efficiency and renewable energy sector, and the respective learning outcomes required for each;
- the best way to embed the requirements for core knowledge and understanding within current certification schemes and existing industry skills frameworks; and
- a consistent methodology for testing and assessing competence, and one for APEL.

11.21

Encourage the immediate inclusion of core knowledge and understanding within current certification scheme criteria.

11.22

Work with the Construction Industry Council and professional institutions to facilitate similar improvement of professional qualifications and CPD content.

11.23

Support the development of online training portals and tools to promote 'approved' training and allow self-assessment of skills and qualifications against the agreed criteria for core knowledge and understanding.

11.24

Engage with the Institute for Apprenticeships (IfA) and Trailblazer Apprenticeships, as soon as possible, to ensure the core knowledge and understanding is being built on to the next generation of learning, including the relevant employer-designed apprenticeship standards which set out what an apprentice will be able to do on completion of their apprenticeship.



32. Qualifications in England, Wales and Northern Ireland are grouped into levels, from entry level to level 8. www.gov.uk/what-different-qualification-levels-mean/compare-different-qualification-levels

12. Compliance and Enforcement

Context

12.1

At the core of the recommendations emerging from other workstreams is an aim to define better standards. Whether these aspirations focus on advice, technical quality, workforce skills or consumer satisfaction and protection, they are a critical step forward to driving up quality. However, it is equally important to ensure that these standards are managed and upheld throughout the supply chain.

12.2

To ensure compliance with standards, the Consumer Charter, Codes of Practice and standards, and Code of Conduct, it is essential to develop a set of requirements against which activities can be measured. On top of this, a robust, transparent and joined-up compliance and enforcement framework is needed, overseen by an open and accountable organisation, the Service Organisation. This will ensure that standards are met, allowing problems to be resolved rapidly and providing a feedback mechanism for best practice.

12.3

As a result, those who meet the standards will benefit from the opportunities presented by working under an energy efficiency and renewable energy sector inclusive and trusted brand. Those who fail to comply with the quality mark will be held to account through a range of sanctions, designed both to discourage and take action on poor practice, and to build public confidence in the sector.

Review and align the frequency of, and mechanism for performing, technical monitoring or on-site audits



Our Recommendations

Recommendation 14

Develop, deliver and maintain a strong consumer-facing brand in the form of a new quality mark, which provides effective redress for the consumer and has a positive association with reputable products and services.

12.4

The proliferation of brands, backed by variable quality guarantees throughout the energy efficiency and renewable energy sector, devalues established brands and confuses the consumer. While existing brands within the energy efficiency and renewable energy sector may wish to maintain the status quo, this may not be in the public's best interest. No single brand offers redress for all parts of the consumer journey associated with an energy efficiency retrofit or renewable energy installation. This leaves most consumers vulnerable when things go wrong, particularly where a claim falls outside existing brand guarantees.

12.5

The creation of a new brand, the quality mark, (akin to the function of the Air Travel Organiser's Licence (ATOL) brand in the travel sector), will cover all aspects of an energy efficiency retrofit, or addition of a renewable energy measure to the home, from point of sale to post installation, backed by guarantee. It will protect the interests of the consumer, and service and product providers. The brand will need to be marketed pro-actively and continuously promoted to quickly establish itself as the trusted quality mark for householders, property owners or property managers seeking to protect their investment in retrofit measures. A high profile marketing campaign, funded by industry, will encourage support for adoption of the quality mark.

Recommendation 15

Identify or establish an organisation to develop and oversee the quality mark and facilitate activities for the day-to-day management of the quality mark, including enforcement, sanctions, technical, operational, and consumer protection related activities.

12.6

This recommendation acknowledges the unnecessarily disjointed nature of the energy efficiency and renewable energy sector. Consumers' interests would be best served through creation of the Framework, and the Service Organisation will, as appropriate, oversee the creation, management and enforcement of standards, processes, documents, and data designed to improve consumer confidence in the energy efficiency and renewable energy sector.

12.7

The industry-led Service Organisation will oversee the activities necessary for consumer protection. It will be appropriately and sensitively-funded by industry. The Service Organisation will not subsume the activities of existing providers, but will challenge, augment, or verify their activities.

12.8

The Service Organisation will oversee activities including, but not limited to:

- developing, maintaining and delivering a quality mark brand which the householder associates with high-quality services, coupled with effective redress mechanisms;
- formulating and delivering the Consumer Code and Code of Conduct;
- overseeing standards-related activities;
- promoting the Information Hub and Data Warehouse and advice services; and
- building data-sharing mechanisms and managing information.

12.9

The Service Organisation will have powers to take action where voluntary adherence to codes and standards cannot be assured. It will have the ability to direct activities to ensure compliance with the quality mark.

12.10

Principal responsibility for all governance matters will lie with the Strategic Governance Board.

Recommendation 16

Put in place a robust and joined-up industry-wide compliance and enforcement regime coordinated nationally; share information on the quality of assessors, designers and installers to facilitate the identification and sanctioning of poor practice, as necessary; and review and align the frequency of,

and mechanism for performing, technical monitoring or on-site audits, possibly introducing a random audit and risk-based approach (where the monitoring frequency is increased when poor quality installations are detected).

12.11

A working group will be set up to identify a robust, efficient and cost-effective quality assurance regime, including the frequency of on-site audits required and who should conduct such audits. The working group will adopt a random audit and risk-based approach, which is proportionate and realistic, and may entail an increase in the level of audit required, both in frequency and rigour when poor quality installations are detected. However, this audit approach will be designed to avoid duplication in monitoring across the energy efficiency and renewable energy sector, allowing a streamlined approach with reduced overall costs. Sanctions for poor performance or conduct against the quality mark will include the withdrawal of the quality mark from organisations. Information on the quality of work carried out by assessors, designers and installers will be analysed, assessed and shared to promote and encourage process improvements to eradicate poor practice.

12.12

A register of participants that engage with the consumer under the quality mark should be developed. Each participant will undergo a certification process against the FOR by an approved certification body working alongside a nationally coordinated inspection regime. Such a combination will compare the participant organisation's functions and delivery outcomes against those expected and would ensure compliance.

Our Action Plan**12.13**

The Compliance and Enforcement workstream will actively engage in the design of the quality mark, and in scoping the Service Organisation's role and essential activities, particularly in establishing a sector-wide compliance and enforcement framework. In taking forward this work, this workstream will collaborate closely with existing compliance checking organisations to ensure approaches are complementary not duplicative.

Case Study: Quality and Standards

Nottingham City Homes

In 2015, Nottingham City Homes (NCH) set out to procure contracts under the Efficiency East Midlands (EEM) framework to install external wall insulation (EWI) to up to 1,500 properties. NCH's detailed knowledge of the housing stock meant they could develop a clear brief, and allowed them to structure the procurement around archetypes. The certainty of social housing properties meant contractors could provide a competitive price. The bid process was weighted towards quality, technical knowledge, best value and a commitment to ensuring that the works would deliver important social benefits by NCH, as well as price.

Sustainable Building Services (UK) Ltd (SBS) using PermaRock Products Ltd as its EWI system supplier and designer won one of the two contracts to deliver in three neighbourhoods over a two year period.

The projects, delivered under the Nottingham City Council 'Greener HousiNG' brand, are cross tenure, so private residents can sign up to have their homes insulated. A fixed price per archetype (previously supported through Green Deal Communities) provides private residents with a clear offer.

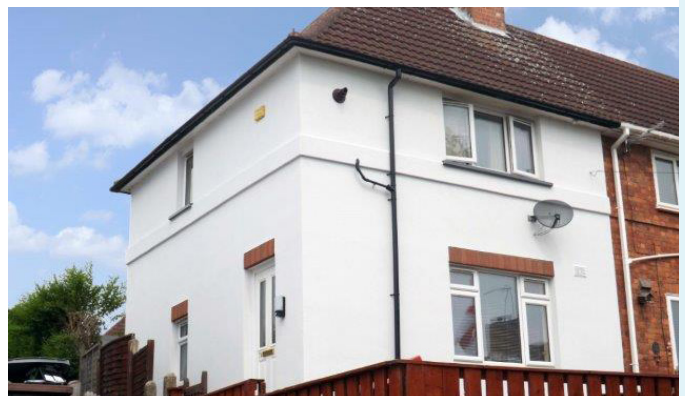
A detailed mobilisation period was used to align processes and NCH's systematic project management, developed whilst delivering Decent Homes. This ensured the project delivered consistently, with cost certainty, and without any weak links in the process.

Representatives from NCH, SBS and PermaRock worked collaboratively on designs and concept drawings to satisfy the particularly stringent planning requirements; due to the properties being Nottingham red brick.

To ensure the highest quality standards, each property underwent a full pre installation survey, including ventilation, moisture and electrical and gas requirements. Full-time on-site technical support and quality management were provided by PermaRock and a fully equipped on-site EWI training facility provided project specific training to over 300 operatives. This was backed by comprehensive technical and design support for all aspects of the EWI system design and detailing keeping the focus on quality at all times.

Resident engagement was key to the success of the scheme with consultation/community events, inductions, aftercare advice/literature and energy efficiency advice provided. Full time site-based Resident Liaison Officers were provided by both NCH and SBS to ensure a high level of engagement with both social and private consumers. Pilot properties were completed and a 'Show home' and information centre was opened for residents.

SBS secured ECO funding to support EWI works to both social and private properties, and built on NCH's existing relationship with local charity Nottingham Energy Partnership to help generate and progress interest from private homeowners. Key Performance Indicator (KPI) data showed consistently 'excellent' consumer satisfaction scores. Thousands of local residents in Nottingham now enjoy better living conditions, improved energy efficiency levels and appreciable annual savings on their energy bills.



13. Insulation and Fabric

Context

13.1

The UK has a large housing stock that needs considerable improvement to help meet government carbon emission reduction and fuel poverty targets. While many successful examples of the installation of energy efficiency and renewable energy measures exist, there are also many cases of poor quality work and performance, especially in the area of insulation and fabric upgrades.

13.2

Attempts to remedy this have been inconsistent in delivering well-constructed and appropriate measures. Homes are, for the most part, individual and any modifications need to take account of location, exposure, history, usage and state of repair, as well as architectural context. Too often there is very poor analysis and consideration of these individual factors prior to modifications being undertaken. This can be driven by scheme mechanisms to install fabric and energy efficiency measures at the lowest possible upfront cost. On occasion, inappropriate insulation has been installed in unsuitable buildings, with poor detailing or without adequate ventilation, etc. This can result in damage to the building fabric, consequent unexpected costs and health issues for the occupants.

13.3

These are avoidable problems if the correct framework is put in place. Success in this area is needed to ensure well-being of individuals, consumers and families, so that all homes provide a secure, comfortable and healthy environment for their occupants.

13.4

During the Review, the scope of this workstream was widened to include the whole building fabric. To deliver the outcomes expected of installing measures, the whole of the building fabric needs to be understood and work undertaken in a proportionate and appropriate way. Addressing one element while ignoring others, or the interfaces, can generate problems. The Insulation and Fabric workstream's recommendations have been written to reflect this inclusive approach.

13.5

As agreed during discussions for this workstream, the key elements of the process for installing and use of measures installed are:

- liaising with consumers;
- information-gathering on the property and its vicinity;
- design;
- installation; and
- how to make the most effective use of the home with measures installed.

13.6

The recommendations in this section reflect the stages of this process and how they can be embedded and strengthened under the Framework.

13.7

Underpinning these key elements are standards, information storage and robust quality assurance. Standards are covered by the Quality and Standards workstream and quality assurance by the Compliance and Enforcement workstream. The role of design in the retrofit process is covered by the recommendations of this Insulation and Fabric workstream.

13.8

In the wider construction sector, a thorough and appropriate design process is undertaken as part of any project to make modifications to a property. It is recommended this is carried out for insulation and fabric measures. The design stage would be undertaken by a competent person and use all the necessary information collected about the property during the early project stages to make the required skilled design decisions.

13.9

This workstream's recommendations are written in the context of insulation and fabric measures, but may have applicability to the other technologies covered by this Review.

Our Recommendations

Recommendation 17

All retrofit projects will have an appropriate design stage process which takes a holistic approach and adequately considers the home, its local environment, heritage, occupancy, and the householders' improvement objectives when determining suitable measures.

13.10

Through discussions across several workstreams and sectors, it has become clear that often little or no focus is put on design and the process can be fragmented and inadequate. This is compounded by a lack of meaningful formal or informal standards for most measures. This can result in inappropriate measures being installed and consequential poor outcomes.

13.11

Under the Framework, every retrofit project will have a single contract carrying the overall design responsibility. The project organisation will be responsible for the property, specific design and specification (including detailing, identifying future maintenance requirements etc.) for the package of energy efficiency and renewable energy measures to be installed. The installer is responsible for installing to the design specification. It is recognised that the design and installation functions could be undertaken by the same company.

13.12

In undertaking an energy efficiency or renewable energy project, the design process will fulfil the following functions:

- 1. Provide adequate information** for householders to make choices on the measures to be installed including materials, systems, styles, approaches, cost and methodologies;
- 2. Drive the install process** including consideration of health and safety (now required under the Construction (Design and Management) Regulations 2015) and all other relevant regulatory and standards requirements to ensure robust certainty and ultimately consumer protection; and
- 3. Establish roles and responsibilities** for actions to be undertaken to install measures, providing clarity for the householder or bill payer and the external quality assessor.

13.13

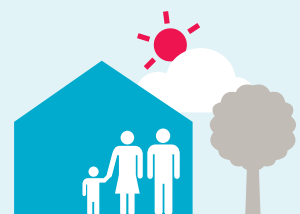
A coordinated and coherent design approach needs to consider the following:

- local planning authority requirements;
- site constraints;
- heritage and architectural features;
- structural defects or existing damp problems;
- other existing or planned energy efficiency measures;
- householders' expressed requirements; and
- specific occupancy patterns, etc.

13.14

The design and specification must address all relevant standards adequately, for example, including Building Regulations' Approved Documents, PAS 2030, Competent Person Scheme, and Microgeneration Certification Scheme (MCS).

Holistic approach to design considers the home, local environment, occupancy and householders' objectives



13.15

The design function will need to give careful attention to ensure that the selection of products and systems suitable for the dwelling takes account of all appropriate points including, for example:

- its features;
- the construction details at all corners, junctions and edges of installed measures, and all interactions between measures;
- the management of moisture within the construction, and the provision of deliberate ventilation sufficient to ensure adequate internal air quality and to minimise condensation risk;
- minimising thermal bridging and thermal bypass to an acceptable level;
- ensuring resilience against rainwater ingress, mitigation of the risk of summer overheating, maintenance requirements to ensure the long-term integrity of the installation; and
- protection against fire risk, and resilience to flood risk.

13.16

A directory of potential issues will be collated, reflecting the particular challenges that the retrofit can pose. In particular, technically complex combinations of classes of building and measures where work should not be carried out or specialist professional support is required will be identified.

13.17

Making the right assessment of how to undertake such work is as important as is what to undertake. In some cases, it may require work to be undertaken in a number of phases rather than all at once. Equally, some instances will require an all-in-one approach.

13.18

It is recommended that the design process considers the heritage of a property including its characteristic style and individual qualities to ensure the essence of these is preserved when installing measures. This can be challenging in dense urban areas.

Recommendation 18

Put in place a process for gathering information and the design specification ahead of any installation of insulation or fabric measures; store this in the Data Warehouse for future use and to facilitate continuous improvement; and load aftercare support and quality information into the Data Warehouse following an installation.

13.19

A prerequisite for a robust design process, and for property-specific advice, is having access to good quality information on the home. Often, existing information may be gathered but not made available to those that need it; or has been mislaid by the householder or not passed on at the point of a sale. This is a missed opportunity. It is important that those carrying out a design function are satisfied that any information relied on in its preparation is adequate.

13.20

The information-gathering has two main aspects:

Collecting the necessary information: a structured approach to information collection is necessary and will be developed as part of the Review's implementation. This will align with two key principles related to the information collected. The process should:

1. be relevant and specific to the particular project requested by the consumer; and
2. cover all aspects of the building affected, and in sufficient detail to ensure the appropriateness of the stages that follow; and

Appropriate storage of data and making

it available for future use: all relevant information that is available will be collated to help inform consumers and those working in the sector. In time, this information will become a significant resource for the consumer and will aid in the continuous improvement of future techniques and processes across the sector.

13.21

For the householder to obtain the best from their retrofit they need:

- clear and appropriate operating instructions and advice;
- clear and comprehensive maintenance information;
- appropriate guarantees; and
- information on potential redress.

All information collated will be stored in the Data Warehouse to be accessed by the householder or, with permission, by other professionals at a later date.

Recommendation 19

Ensure that the Insulation and Fabric workstream feeds into the standards, skills and quality assurance development processes, and that these reflect best practice, and fully take account of the issues specific to the measures.

13.22

There needs to be mandatory standards, specifications and guidance to underpin the recommendations made in this Chapter. Currently, a large amount of information exists that will be used as the starting point for such documents. These documents need to be brought together, peer reviewed for quality, formally adopted across the sector, and made available under an easy to find system. This is covered by the Quality and Standards workstream.

13.23

Members of the Insulation and Fabric Workstream will feed into the creation of the Framework to ensure it fully takes account of the issues specific to the particular measures. As part of the core recommendations of this Review, the establishment of a quality assurance framework across the sector is considered essential. This will provide oversight of all aspects of retrofit work, and drive the standards and appropriate behaviours of all parties at all times. The quality assurance framework will be structured such that all retrofit projects undertaken have a credible risk of meaningful, unannounced and independent inspections by a competent retrofit professional. This will be coupled with the confidence that those not achieving the required standards are robustly sanctioned through the withdrawal of the quality mark, as appropriate.

Our Action Plan**13.24**

The Insulation and Fabric workstream will engage closely with other workstreams in the development of the standards (as they apply to measures and the design function), the design of a robust and independent quality assurance process, and the development of the Data Warehouse.

13.25

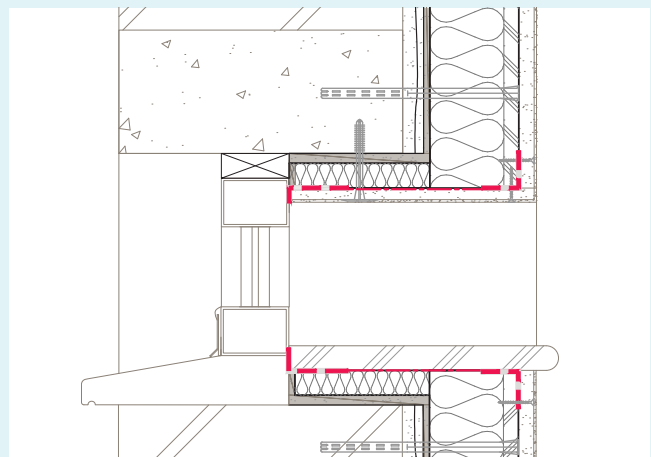
The Insulation and Fabric workstream will develop appropriate guidance and procedures to ensure that all work is designed in accordance with the necessary codes, regulations and standards.

13.26

The workstream will also develop appropriate guidance to ensure the key principles of measure, design, procure, install and check are embedded in every project.

13.27

Moreover, the workstream will liaise with others to ensure that the appropriate training and skills are available to enable all work to be undertaken correctly, including design and procurement, as well as installation.



Reprinted with permission of Natural Building Technologies.

14. Smart Meters

Context

14.1

Smart meters will put consumers in control of their energy use, bring an end to estimated bills, make switching energy providers faster and easier, and help people to save energy and money. Every home and small business in Great Britain will be offered a smart meter by the end of 2020, which presents energy suppliers with a once in a generation opportunity to engage with their entire customer base on energy efficiency.

14.2

Energy suppliers must ensure that they, and any third party organisations to which they have outsourced their smart meter installations, comply with their obligations under the Smart Metering Installation Code of Practice³³ (SMICoP). The main objectives of SMICoP are to make sure that the customer receives a high standard of service throughout the installation process, and knows how to use, and benefit from, the smart metering equipment to improve the energy efficiency of their home.

14.3

Key delivery partners working together will be essential to ensuring a good customer journey through the roll-out, whilst effective complaints handling and redress processes will provide an important safety net for consumers.

14.4

The number of meter replacements over the period 2017–2020 will require a significant increase in installer numbers. Installer training can take from six to twelve months, plus time shadowing in the field. Therefore, it is important that there is a pipeline of new installers so that suppliers can increase their roll-out volumes to peak levels. It is crucial that each installation is completed efficiently so as to not inconvenience consumers, but is carried out in a way that is safe for the installer and customer.

14.5

Smart meters will communicate with communications hubs, In Home Displays and other consumer devices via a Home Area Network (HAN). The 2.4GHz HAN solution specified in the second version of the Smart Metering Equipment Technical Specifications (SMETS2) and the Communications Hub Technical Specifications will be capable of serving approximately 70% of Great Britain premises (including flats). An 868MHz solution will increase that coverage so that around 96.5% of premises can be served.

14.6

Alternative HAN solutions are needed for the remaining 3.5% of premises for which the above solutions will not work – for example, some, but not all, flats. In December 2015, the Government concluded that energy suppliers should work together to help ensure that all Great Britain premises can benefit from smart metering by developing Alternative Home Area Network Solutions. Regulatory provisions to support this came into effect in July 2016³⁴.

33. Smart Metering Installation Code of Practice: www.smicop.co.uk/SitePages/Home.aspx

34. Government Response to the Consultation on the delivery model and regulatory requirements for Alternative HAN, 27 April 2016: www.gov.uk/government/publications/solid-wall-insulation-future-recommendations

14.7

Therefore, industry collaboration is essential to help ensure that all homes and small businesses in Great Britain can benefit from smart metering as soon as possible, and that less routine installations are managed in a cost-effective and coordinated manner for all parties, particularly consumers.

Our Recommendations:

Recommendation 20

Provide tailored home energy efficiency advice to consumers during the smart meter installation visit, and ensure key delivery partners work together to deliver a good customer journey throughout the roll-out.

14.8

Energy suppliers should use good practice materials and approaches developed by BEIS to provide tailored home energy efficiency advice at smart meter installations.

14.9

Energy suppliers and network operators should proactively identify and mitigate potential areas of consumer detriment. Where consumer issues arise, these should be addressed and remedied quickly, with any common challenges acted upon consistently. This should include issues identified and reported by Citizens Advice, via the transitional governance arrangements of the Smart Meter Implementation Programme.

14.10

Energy UK and energy suppliers must work with Ombudsman Services and Citizens Advice to improve suppliers' own complaints handling so they are dealt with effectively. Where complaints are unresolved, they must ensure consumers have the information they need to access third party redress.

Recommendation 21

Industry should work together to ensure that the capacity and skills of smart meter installers deliver a safe and efficient roll-out.

14.11

To ensure installations are completed to an appropriate standard, all suppliers, and agents acting on their behalf, must participate fully in relevant industry initiatives, including the National Skills Academy for Power's installer referencing and accreditation schemes.

14.12

Work should be taken forward under the joint sponsorship and leadership of Energy UK and the Energy Networks Association, on behalf of the industry, to develop a core set of health and safety principles for the smart meter roll-out for adoption by all industry parties.

14.13

Where energy suppliers plan to outsource the installation of meters, they should continue to prioritise the activity necessary to put contracts in place in a timely manner.

Recommendation 22

Industry should work together effectively to ensure that smart meters can be installed in as many properties as possible, regardless of property type.

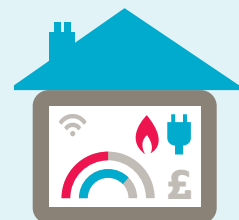
14.14

The Government should introduce provisions to ensure that energy suppliers are able to work together effectively to deliver Alternative Home Area Network solutions. Separately, the Smart Energy Code Panel's technical sub-committee should engage with the full range of industry players (including communications providers, meter manufacturers, device manufacturers, etc.) when undertaking its regular reviews of Home Area Network provisions.

14.15

Network operators must work closely with energy suppliers so that faults are accurately classified across the industry during smart meter installations and information is shared across industry, to aid timely rectification.

Ensure smart meters can be installed in as many property types as possible



14.16

Industry parties must work closely with BEIS to extend the timeline of the current Joint Industry Plan from 2017 to the end of the smart meter roll-out in 2020, setting out key milestones and activities.

14.17

The NHF, its members, Smart Energy GB, Energy UK, energy suppliers and network operators should work together to raise awareness and develop understanding of smart metering within the sector and amongst tenants, as well as encouraging access to premises to support the efficient installation of communal infrastructure (where needed) and metering equipment.

Our Action Plan and Progress So Far

14.18

Ombudsman Services are working with Ofgem, Energy UK, Citizens Advice and a range of other stakeholders to improve complaint handling in the industry, particularly on using data in a more preventative and systemic way, and will continue to collaborate on this in the future.

14.19

Develop and present high-level health and safety principles for sign off by the Smart Meter Steering Group (completed October 2016).

14.20

Implementation to be monitored via the Smart Meter Operations Group (2016-2020).

14.21

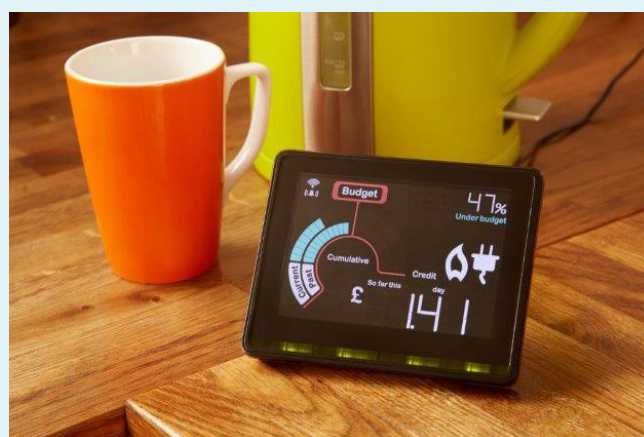
Energy suppliers to nominate representatives to the Home Area Network Forum before the Alternative HAN legal drafting is in place (completed July 2016).

14.22

Energy suppliers, through the Transitional and enduring Alternative HAN Forum, to work collectively to develop Alternative HAN Solutions (ongoing).

14.23

BEIS to extend the remit of the Technical Architecture and Business Architecture Sub-Committee (TABASC) to require review of HAN Requirements (completed July 2016).

**14.24**

TABASC to establish a community of industry experts to support its work on HAN Requirements and its wider responsibilities (completed July 2016).

14.25

Distribution Network Operators and energy suppliers to utilise the new Smart Meters Operations Group to escalate and resolve any issues threatening the efficient rectification of network defects discovered during the smart meter roll-out (throughout the roll-out).

14.26

Distribution Network Operators and Gas Distribution Networks to raise generic reporting issues at the Intervention Solutions Sub-groups which have been established under the Distribution Connection and User of System Agreement (DCUSA – electricity) and Supplier Point Administration Agreement (SPAA-gas) and raise supplier specific issues with the companies concerned on a bilateral basis (throughout the roll-out).

14.27

BEIS to work with industry to set out a high-level Joint Industry Plan to 2020 (completed October 2016).

15. Home Energy Technologies

Context

15.1

It is an exciting period for a number of emerging technologies that impact on energy use in the home. New and innovative technologies, such as energy storage, small scale renewable energy measures and smarter heating controls, as well as smart metering and connected homes are beginning to change how householders interact with their homes. Alongside and in addition to existing energy efficiency technologies, it has never been more important that consumers understand how to make best use of all of the opportunities offered. Consumers can benefit significantly from the installation of both existing and new technologies, but they have to be comfortable with the way in which these solutions are offered, installed and maintained.

15.2

The speed of change of technology advances also presents challenges for the Framework. We need to ensure that standards, guidance and advice are able to stay current and relevant. It is vital that products are proven to be compliant with relevant standards and specifications, and that the installation of these products ensures totally safe operation and provides the promised energy efficiency improvements and user benefits. However, in doing so, we need to ensure that we are not hindering both well-established industries and the development of innovative solutions. We need to develop straightforward processes, both to support the increased uptake of established technologies, and for new technologies to be able to quickly show that they can be safely and effectively installed.

15.3

The Home Energy Technologies workstream has identified existing good practice that can be built upon, and areas needing improvement to support the Report's recommendations. This was achieved by the production of sixteen templates, each one covering an individual technology. Based on these, the workstream identified three groups of technologies, each at a different stage of development and therefore requiring differing approaches in relation to the Framework.

15.4

Group 1 – Established energy efficiency technologies have an important part to play to help consumers manage their energy consumption. For example, 1.5 million highly-efficient condensing boilers are installed every year, alongside heating controls, and will continue to play a role in the future. Other technologies, including LED lighting, Solar Photovoltaic, Solar thermal and ventilation, are already widely used in homes. Standards and good practice in these technologies are often well-established. It is vital that these are maintained, consolidated or improved where possible to meet the Framework.

15.5

Group 2 – There are a number of technologies which have been available for consumers on the market for some time, and are providing benefits, but their application is not as mainstream as products in the first group. As a result, the available information and guidance is often less well understood by specifiers and installers. It is important that these measures can be considered alongside the well-established and widespread measures. Therefore, the guidance and standards for these measures will, in many cases, need to be reviewed in more detail than those in group 1. Heat pumps, biomass and hybrid boilers and lighting controls could be examples of technologies in this group.

15.6

Group 3 – In the final group, there is a set of technologies that are just emerging into the sector, such as consumer access devices, smart home technologies, electric vehicle charging, and energy storage solutions. These, and other emerging technologies, are supported by less well-established quality systems and standards, some with only limited installation standards and agreed advice materials. The recommendations covered in previous chapters will be of great assistance, providing the necessary framework for each technology to develop alongside more established technologies. The challenge will be to adopt the Framework without stifling innovation.

15.7

If the energy efficiency and renewable energy sector is to be successful in the future, a consistent approach across these three technology groups is required. This workstream seeks to ensure that customers receive the same level of advice, guidance and protection whatever the measure being installed.

15.8

A wide range of technologies have been discussed as part of this workstream, but given the number of technologies, the individual findings are not covered in this Report. This workstream has instead focused on the overarching themes.

Our Recommendations

Recommendation 23

Undertake a review of all technologies covered by the Framework to identify compatibility with the new Framework; and develop action plans for each technology, as required, to align with the new Framework.

15.9

The range of technologies covered by this workstream is very wide. Sixteen technologies were analysed at a high-level to give a picture of their likely compliance with the Framework. Many of the recommendations here are the outcome of that work.

15.10

During the initial high-level review, a number of the technology groups highlighted the likely need for improvements to be made to the existing certification arrangements to meet the Framework's requirements. In some cases, there was a sense that existing requirements, whilst robust in places, had led to over-complication, with multiple certifications required for different technologies or funding schemes (for example, Eco design and energy labelling regulations, MCS and Standard Assessment Procedure (SAP) all link to certified and supplied data). Current frameworks sometimes have been ineffective in enforcing performance standards. The proposed Framework to deliver higher standards, and include feedback loops to inform manufacturer, installer and certification bodies to allow continuous improvements, was welcomed by the workstream. However, this must not result in increased requirements for organisations, and simplification, where possible, should be a priority.

Recommendation 24

Industry to develop a set of independent, impartial advice documents and/or web-based tools for both consumers and the supply chain covering each specific technology, where possible using existing material, and working with the organisation responsible for delivering the Information Hub.

15.11

It is a challenge to ensure that the advice given to householders remains current and relevant. For example, many consumers understand the role of their central heating boiler, their stored hot water and their bathroom ventilation, but have difficulty understanding their heating controls, in particular, to minimise energy use in their homes. With new technologies entering the market every day, it can often be difficult for the consumer to keep abreast of the opportunities they bring and, in some cases, the changes in behaviour and timing of appliance usage that ensue. Building on the more general advice of the Advice and Guidance workstream, the Home Energy Technologies workstream proposes product-specific, consumer-focused advice is developed. The industry, in partnership with energy advice, installation colleagues and energy retailers, need to ensure they are developing advice that allows householders initially to make an informed choice, and ultimately to obtain the maximum benefit from their technology choices.

15.12

In addition, and as the rate of change in technologies increases, a number of different financing models are emerging for products and services. Industry must ensure consumers are well-advised in how these financing models will work, and that they continue to enjoy the benefits of consumer protection when acquiring products and services via these various mechanisms.

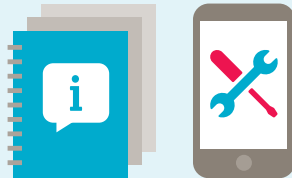
15.13

The Framework and all stakeholders must recognise that installation standards go hand-in-hand with product standards. There is little benefit to the consumer from a technology being installed in an expert, compliant manner, if the product or system is itself non-compliant, or vice-versa. This is relevant for both existing and new products. For the latter, the lower level of consumer awareness and reduced consumer experience could allow non-compliant products to enter the market. It is vital that the Framework retains a strong emphasis on product compliance.

Recommendation 25

Ensure the new Framework is sufficiently flexible to cover existing technologies and facilitate the entrance of new technologies; and develop a route map setting out the steps that new technologies will need to go through to operate under the Framework.

Develop a set of impartial advice documents and web-based tools

**15.14**

Advances in energy efficiency in the future will come from continuous improvements in existing technologies, and from the development of new and innovative solutions. To maximise consumer benefits of these technologies, there is a need to ensure that the processes in place are sufficiently flexible. During the Review, it was highlighted that this was an issue in the past, for example, where product performance testing was not fed into assessment methodologies (e.g. SAP) within sufficient timeframes. This has often led to advanced or new technologies being undervalued, with consumers not properly informed of their potential benefits.

Recommendation 26

Industry to develop any relevant new standards, specifications and guidance covering the integration and inter-operability of home energy technologies under the Framework, and consider these as part of the standards mapping exercise recommended by the Quality and Standards workstream.

15.15

One clear theme emerging from the Home Energy Technologies workstream was the need for stronger guidance on integration between technologies. Many technologies, both existing and new, rely on complementary technologies to operate at their maximum efficiency. For example, the long-term efficiency of heating systems of all types relies upon an efficient boiler, as well as the interaction of compatible controls, water treatment solutions, good user interfaces and solar thermal where installed. In the future, the best returns for consumers from home energy generation technology will rely increasingly on local energy storage, smart home controls, or integration of other equipment in homes. Consumer acceptance and delivery of benefits will require coordinated work from the industry to ensure standards, training and guidance are up to the required level.

15.16

Integral to this will be ensuring that policy-makers and industry give greater consideration to future proofing. This is often very difficult, as short-term benefits can have negative unintended consequences in the long-term.

15.17

It is also vital that policy makers and industry pay increasing attention to interoperability of communication technologies, particularly when devising standards. Workstream members felt that there was a need for all market stakeholders to work together to ensure that products are compatible with relevant communication protocols. There is a great risk of undermining consumer confidence if products become obsolete within a short time period because of compatibility issues.

Our Actions and Progress So Far

15.18

This Home Energy Technologies workstream will take forward the key recommendations based on the templates covering the different technologies, with each industry group developing an action plan required for their product sector.



16. Application to Social Housing

Context

16.1

The social housing sector has approximately 4 million homes, with 2.4 million owned by Housing Associations and 1.7 million owned by Local Authorities³⁵. This chapter focuses on Housing Association owned properties³⁶.

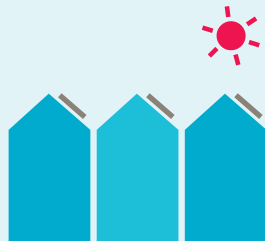
16.2

Housing Associations have a key role to play in the delivery of energy efficiency and renewable energy installations at scale for low income and vulnerable residents as part of wider home improvement programmes. Despite a better than average energy performance than other sectors, one in ten Housing Association homes is in fuel poverty.

16.3

Housing Associations are committed to tackling fuel poverty, but are constrained by budgetary pressures, competing regulatory priorities and national energy efficiency programmes that are not aligned with social housing investment planning and asset management practices.

Collaboration to ensure the Framework applies to improvements in Housing Associations' stock, at scale



16.4

The National Housing Federation (NHF) is the voice for the providers of over 90% of Housing Association housing stock in England, and its members provide homes for more than 5 million people³⁷. Housing Associations are committed to improving energy efficiency, reducing emissions, providing affordable warm homes, and making investments in neighbourhood projects to help create strong and vibrant communities. To consider the application of the Review recommendations in the social housing sector, NHF and its Existing Homes and Neighbourhoods Group, have partnered with organisations at the leading edge of delivery of large-scale UK energy efficiency programmes, such as Orbit Group, Affinity Sutton, The Guinness Partnerships, Moat, Southern Housing Group, Hastoe and Peabody.

Our Recommendation

Recommendation 27

Housing Associations will collaborate with industry and government to ensure that the Framework applies to the delivery of improvements in their housing stock, incorporating energy efficiency and renewable energy measures at scale.

16.5

Housing Associations have actively encouraged the uptake of energy efficiency and renewable energy measures in social housing. Housing Associations offer a unique opportunity to deliver those measures at scale by bringing expert knowledge of their housing stock, understanding of customer behaviours, and a proven track record of innovation and established partnerships with industry, government and service providers. In this context, Housing Associations can consider and develop plans for how the Review recommendations can be implemented in their sector.

35. www.gov.uk/government/uploads/system/uploads/attachment_data/file/501065/EHS_Headline_report_2014-15.pdf

36. www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2016

37. www.housing.org.uk

16.6

Through its engagement with the Review, the social housing sector has demonstrated its commitment to working with industry to implement the proposed Framework, with a tangible impact on the ground in communities.

16.7

The effective implementation of the recommendations and the delivery of home improvements at scale to tackle fuel poverty can be supported by the alignment of the wider policy environment and external funding.

Our Action Plan

16.8

Promote the Review's recommendations and Framework with Housing Associations, and establish a Housing Association Implementation Panel, coordinated by Orbit Group, to take forward the recommendations, with industry and government collaboration to consider the future shape of social housing energy efficiency programmes.

Glossary

ADR Alternative Dispute Resolution: a method to provide an alternative to court action (e.g. where consumers and traders could potentially resolve their disputes)

APEL Approach to recognising Prior Experiential Learning

Approved Document A document which provides official guidance in the context of Building Regulations

ASA Advertising Standards Authority

ATOL Air Travel Organiser's Licence

BBA British Board of Agrément

BCC Bristol City Council

BEAMA British Electrotechnical and Allied Manufacturers' Association

BEIS Department for Business, Energy and Industrial Strategy (incorporating the former DECC)

BSI British Standards Institution

CIGA Cavity Insulation Guarantee Agency

CO₂ Carbon dioxide

Code of Conduct An agreement on rules of behaviour for the members of a group or organisation

Codes of Practice A set of written technical rules which explains how people working in a particular profession or organisation should operate

Consumer Charter A document that provides a framework for defining service delivery standards, the rights of customers, and how complaints from customers will be handled

CPA Construction Products Association

CPD Continuing Professional Development

Data Warehouse A large store of property-level data accumulated from a wide range of sources, as proposed in this Review

DCLG Department for Communities and Local Government

DECC Department of Energy and Climate Change (now part of the Department for Business, Energy and Industrial Strategy)

DCUSA Distribution Connection and User of System Agreement

ECO Energy Company Obligation, a government scheme to obligate larger suppliers to deliver energy efficiency measures to domestic premises in Great Britain

EEM Efficiency East Midlands

EHS English Housing Survey

EPB Energy Performance of Buildings

EPC Energy Performance Certificate

ESAS Energy Saving Advice Service

EST Energy Saving Trust

EWI External Wall Insulation

FiTs Feed-in Tariffs

FOR Framework Operating Requirements

Framework The quality and standards framework proposed in this Report

GDC Green Deal Communities

GHz Gigahertz

Holistic Property Approach also known by some as the 'whole house' approach, considers the house as an energy system with interdependent parts, each of which affects the performance of the entire system. It also takes the occupants, site, and local climate into consideration

Implementation Board The industry-led implementation board supporting the Review and its implementation in practice

Information Hub A source of trusted information and advice to assist consumers and installers, as proposed in this Review

Kitemark A quality mark owned and operated by BSI

KPI Key Performance Indicator

LAs Local Authorities

Lead Generator An organisation that collects names and contact information about qualified prospects which could be contacted by the salespeople for generating orders

LED Light-emitting Diode

MCS Microgeneration Certification Scheme

MHz Megahertz

MOJ Ministry of Justice

MTC Minimum Technical Competence

NCH Nottingham City Homes

Nest Scheme A Welsh Government-funded programme managed by British Gas

NHF National Housing Federation

NIA National Insulation Association

Ofgem The Office of Gas and Electricity Markets

Ofgem E-Serve Ofgem division which administers the Government's green energy and social schemes

OFT Office of Fair Trading

ONS Office for National Statistics

PAS Publicly Available Specification

PAS 2030 PAS 2030:2014 (Improving the energy efficiency of existing buildings. Specification for installation process, process management and service provision)

PAS 2031 PAS 2031:2015 (Certification of energy efficiency measure (EEM) installation service)

QA Quality Assurance

R&D Research and Development

Report The report detailing the findings for the Each Home Counts Review: An Independent Review of Consumer Advice, Protection, Standards and Enforcement for Energy Efficiency and Renewable Energy

Review The independent review of consumer advice, protection, standards and enforcement for home energy efficiency and renewable energy measures in the United Kingdom

SAP Standard Assessment Procedure

Single Promise Guarantee A single guarantee for the consumer which covers the installation of the product and the material and their manufacture

SGB Strategic Governance Board: the independent industry-led board which will oversee the strategic direction of the new Framework proposed in the Review and implementation of this Report's recommendations

SME Small and Medium-sized Enterprise

SMETS2 Smart Metering Equipment Specifications

SMICoP Smart Metering Installation Code of Practice

Service Organisation The industry-led not-for-profit organisation to be set up to manage the quality mark and standards framework

SPAA Supplier Point Administration Agreement

STBA Sustainable Traditional Buildings Alliance

TABASC Technical Architecture and Business Architecture Sub-Committee

UKAS United Kingdom Accreditation Service

Acknowledgements

Thank you to all the individuals and organisations who have engaged with the Review and its related workstreams

A

4D Energy Limited
 A&M Energy Solutions Ltd
 Aberdeen Heat and Power Company Ltd
 Accord Group
 Addleshaw Goddard LLP
 AeroTherm Products
 AES Sustainability Consultants
 Affinity Sutton
 Age UK
 Airflow Developments Limited
 Alsecco (UK) Ltd
 Alumasc Group plc
 Anderson Strathern LLP
 Andrew Burke
 Anesco Limited
 Anthony Chapman
 Aon Benfield
 Arup
 Association for Innovation, Research and Technology Organisations (AIRTO)
 Association for Technical Monitoring Agents (ATMA)
 Association for the Conservation of Energy (ACE)
 Association of Colleges (AOC)
 Association of Plumbing & Heating Contractors Limited (APHC)
 ATLAS Sp. z o.o

B

Barbara Simpson
 Barnsley College
 BASF
 Bath & North East Somerset Council
 Baxi Heating UK Limited
 Behaviour Change
 Benchmark Certification Ltd
 Black Country Housing Group (BCHG)
 Blueberry Home Solutions
 BM Trada

Borough IT
 Bostik
 BR Testing Limited
 Brian Benson
 Bristol City Council
 British Electrotechnical and Allied Manufacturers' Association (BEAMA)
 British Energy Efficiency Forum (BEEF)
 British Gas
 British Plastics Federation (BPF), Expanded Polystyrene and Window Groups
 BSRIA Ltd
 Builders Merchants Federation Limited
 Building & Ecobuild
 Building Engineering Services Association (BESA)
 Building Regulations Advisory Committee (BRAC)
 Building Research Establishment (BRE)
 buildingSMART

C

C40 Cities Climate Leadership Group
 Calibrate Ltd
 Camden Council
 Capita
 Carillion Plc
 Cavity Extraction Limited
 Caz Jones
 Celotex Limited
 Cenergis Limited
 Centre for Sustainable Energy (CSE)
 Centre of Refurbishment Excellence (CoRE)
 Centrica plc
 Certass Limited
 CertiNergy Limited
 Certsure LLP
 CGI
 Chartered Trading Standards Institute (CTSI)

Chiltern Power Limited
 Chimney Sheep Ltd
 Citizens Advice
 City & Guilds
 CO-Gas Safety
 Committee on Fuel Poverty (CFP)
 Competent Person Forum (CPF)
 Compliance and Business Support Services Limited
 Construction Products Association (CPA)
 Consulting With Purpose Ltd
 Consumer Futures
 Council of Mortgage Lenders (CML)
 Country Land and Business Association Limited (CLA)
 Cutland Consulting Limited

D

Daikin Airconditioning UK Ltd
 David Keating
 David Kilner
 David Thompson
 Department for Business, Energy and Industrial Strategy (BEIS)
 Department for Communities and Local Government (DCLG)
 Department for the Economy, Northern Ireland
 Designs on Property Ltd
 Dyson Energy Services Ltd

E

E.ON UK
 East Hampshire District Council
 Eastleigh Borough Council
 ECD Architects Limited
 ECO Deal Limited
 ECO Industry & Fraud Prevention & Compliance Committee (EIFPCC)
 ECO Stakeholder Delivery Group
 Ecobuild, UBM plc

Ecology Building Society	Green Heat Limited	JPJN Partners Limited
Ecuity Consulting LLP	Green Tomato Energy	Jub Limited
EDF Energy Plc	GreenDealPembrokeshire Limited	Julian Boss
Electrical Contractors' Association (ECA)	Greener Energy Consultancy Services Ltd	K
Elmhurst Energy Systems Ltd	GTEC	Keepmoat Limited
Emerson	Gti Direct	Kensa Group Limited
EMME Group	H	Kingspan Group
Encraft Ltd.	Hamilton First Limited	Kingspan Insulation UK
Energiesprong	Hansford Review	Kinnell Holdings Limited
Energy & Utility Skills Limited	Happy Energy Ltd	Knauf Insulation
Energy and Utilities Alliance (EUA)	Hastoe Group	KPMG
Energy Basics Limited	Health and Safety Executive (HSE)	L
Energy Networks Association (ENA)	Heat Pump Association (HPA)	LaSer UK Partner Finance
Energy Saving Trust (EST)	Heat Trust	Lawrence Foote & Partners
Energy Systems Catapult	Heating and Hotwater Industry Council (HHIC)	Lawtech Group Ltd
Energy Technologies Institute LLP (ETI)	HETAS Ltd	Legrand Electric Limited
Energy UK	Historic England	Liz Reason
Energystore Ltd	Hive Active Heating	Llewellyn Smith Ltd
Engineering Council	HM Government Chief Construction Adviser	Local Authority Building Control (LABC)
Enviroform Solutions Ltd	Hockerton Housing Project	London South Bank University, Centre for Efficient and Renewable Energy in Buildings (CEREB)
eTech Solutions Limited	Home Energy Advice	M
European Utilities Telecom Council (EUTC)	Home Insulation & Energy Systems Contractors Scheme (HIES)	Madano Partnership Ltd
Ewi Pro Limited	Home Retail Group	Mapei (UK) Ltd
Exodus Solutions Ltd (Expertina)	HomeAdviceHub	Mark Group Limited
F	HS2	Mark Hopkins
Federation of Master Builders (FMB)	Hywel Williams MP	Marksman Consulting LLP
FENSA Limited (Fenestration Self-Assessment Scheme)	I	Martin Wheatley Strategic Advice
Finishes and Interiors Sector Limited (FIS)	IBM	Michael Hamer
First Base Limited	Ice Energy Technologies	Microgeneration Certification Scheme (MCS)
Fusion21	ICOM Energy Association	Mineral Wool Insulation Manufacturers Association (MIMA)
Future Climate	InBuild Solutions Limited	Moat Homes Limited
Futurewave, Energy Innovation Centre	Information Commissioner's Office (ICO)	Moneysavingexpert.com Limited
G	Innovate UK	MVF Global, The Eco Experts
Gas Safe Register	InstaGroup Ltd	N
Gastag	Institution of Civil Engineers (ICE)	National Association of Professional Inspectors and Testers (NAPIT)
Gemserv Limited	Insulating Concrete Formwork Association	National Audit Office (NAO)
Gentoo Green Limited	Intertek	National Energy Action (NEA)
Gerlinde Gniewosz	isoenergy	National Energy Action (NEA) Business Supporters Group
Global Insights Limited	Isothane Limited	National Energy Foundation (NEF)
Global Smart Transformation Limited (GST Ltd)	J	National Energy Services Limited (NES)
GQA Qualifications	J&J Crump & Son	National Federation of Self Employed & Small Businesses Limited (FSB)
Grayling	James Renshaw	National House Building Council (NHBC)
Greater London Authority (GLA)	Jeff Howell, The Sunday Telegraph	National Housing Federation (NHF)
Greater Manchester Combined Authority (GMCA)	Jill Williams	National Insulation Association (NIA)
Green Construction Board	John Preston	National Landlords Association (NLA)
Green Deal Advisor Association	Johnson & Starley Limited	
Green Deal Consortia Ltd	Jones Lang LaSalle Corporate Finance Limited	
Green Gauge Trust		

National Skills Academy for Power
 Natural Building Technologies
 Navitron Limited
 Network VEKA Limited
 NICEIC
 Nick Whitaker
 Northern Ireland Housing Executive
 Northgate Public Services
 Nottingham City Homes
 Nova Connection
 npower
 NPTC Group

O

Office of Gas and Electricity Markets (Ofgem)
 Oil Firing Technical Association (OFTEC)
 OPX London
 Orbit Group
 Ordnance Survey
 Ovo Energy

P

Parity Projects Limited
 Passivhaus Trust
 Paul Hadfield
 PBA Energy Solutions Ltd
 Peabody Trust
 PECT Consultancy Limited
 PermaRock Products Ltd
 PJB Associates
 Places for People
 Platform d-Risk and EMME Group Ltd
 Plymouth City Council
 Polypearl Ltd
 Poweri Services Ltd
 Preston City Council
 Prewett Bizley Architects
 Property & Energy Professionals Association (PEPA)
 Property Tectonics

Q

Quality Assured National Warranties (QANW)
 Quidos

R

Regulatory Assistance Project (RAP)
 Renewable Energy Association (REA)
 Renewable Energy Assurance Limited, Renewable Energy Consumer Code (RECC)
 Renewable Energy Skills Forum
 RenewableUK Cymru
 Residential Landlords Association (RLA)

Richard Cope
 Richard Thomson
 Rickaby Thompson Associates Ltd
 Robert Piller
 Robust Details Limited
 Rockwool Limited
 Rosie Lodwick
 Royal Academy of Engineering
 Royal Institute of British Architects (RIBA)
 Royal Institution of Chartered Surveyors (RICS)

S

Saint-Gobain
 Saint-Gobain Isover
 Saint-Gobain Weber
 Sarah Beeny
 Scottish Government, Better Homes and Building Standards Division
 Scottish Power
 Sebastian Vandort
 Severn Wye Energy Agency Ltd
 Shermin Finance Limited
 Sir Mark Walport, Government Chief Scientific Adviser
 Skyblue Research Ltd
 Smart Energy GB
 Smart Homes and Buildings Association (SH&BA)
 SMi Group Ltd
 Solar Trade Association (STA)
 Solid Wall Insulation Guarantee Agency (SWIGA)
 Solihull Metropolitan Borough Council
 Southern Housing Group
 Spark Energy UK
 SPS Envirowall Limited
 SSE plc
 St Helens Council
 Steve Ackroyd
 Sto Ltd
 Stroma
 Stroma Certification
 Structerm Ltd
 Sue Bloomfield
 Sue Hornblower
 SummitSkills Limited
 Supply Chain Insight Group
 Sustain Ltd
 Sustainable Building Solutions (SBS)
 Sustainable by Design LLP
 Sustainable Energy Association (SEA)
 Sustainable Energy Services

Sustainable Homes Limited
 Sustainable Housing Action Partnership (SHAP)
 Sutton Solar & Renewables Limited

T

Telefónica
 The Association for Decentralised Energy (ADE)
 The Association for Environment Conscious Building (AECB)
 The Brick Development Association
 The British Board of Agrément (BBA)
 The British Property Federation (BPF)
 The British Rigid Urethane Foam Manufacturers' Association (BRUFMA)
 The British Standards Institution (BSI)
 The British Woodworking Federation Ltd (BWF)
 The Carbon Catalysts Group
 The Cavity Insulation Guarantee Agency (CIGA)
 The Cavity Insulation Victims Alliance (CIVALLI)
 The Chartered Institute of Architectural Technologists (CIAT)
 The Chartered Institution of Building Services Engineers (CIBSE)
 The Confederation of British Industry (CBI)
 The Construction Industry Council (CIC)
 The Construction Industry Training Board (CITB)
 The Council for Aluminium in Building
 The Energy Association
 The Federation of Environmental Trade Associations (FETA)
 The Forum for the Future
 The Foundation of Science and Technology (FST)
 The Glass and Glazing Federation (GGF)
 The Guinness Partnership Limited
 The Insolvency Service
 The Institute of Domestic Heating & Environmental Engineers (IDHEE)
 The Institute of Welsh Affairs (IWA)
 The Institution of Engineering and Technology (IET)
 The Insulated Render and Cladding Association (INCA)
 The Kinnell Group
 The Lighting Industry Association (LIA)
 The National Consumer Federation (NCF)
 The National Federation of Roofing Contractors Limited (NFRC)
 The National Home Improvement Council (NHIC)
 The Ombudsman Services Limited

The Retrofit Academy

The Scottish Government, Better Homes Division

The Sustainable Energy Academy (SEA)

The Sustainable Traditional Buildings Alliance (STBA)

TheGreenAge

ThermaBead Ltd

Travis Perkins plc

TrustMark

U

UK Green Building Council (UK-GBC)

UK Landlord Accreditation Partnership (UKLAP)

UK National Standards Committee for Solar Heating at BSI

United Kingdom Accreditation Service (UKAS)

University College London (UCL), Department of Science, Technology, Engineering, and Public Policy, and the Energy Institute

University of Birmingham, Birmingham Energy Institute (BEI)

University of Cambridge, Department of Engineering

University of East Anglia (UEA), Tyndall Centre for Climate Change Research

University of Exeter, Energy Policy Group

University of Leeds, School of Earth and Environment

University of Oxford, Environmental Change Institute (ECI)

University of Reading, School of Construction Management and Engineering

University of Salford, Applied Buildings & Energy Research Group

University of Surrey, Centre for the Understanding of Sustainable Prosperity (CUSP)

University of Warwick, School of Engineering

University of Warwick, Warwick Business School (WBS)

V

Viessmann

VNR Contracting Services Ltd

W

Warm Zones C.I.C.

Warmfill Ltd

Warmfront Limited

Wates Group

Welsh Government/Llywodraeth Cymru

West Sussex County Council

West Yorkshire Combined Authority

Westcott Consultancy Limited

Westminster Advisers

Westminster City Council

Westville Group

Wetherby Building Systems Ltd

Which?

White Design

Wickes

Willmott Dixon

Willmott Dixon Energy Services Limited

Windhager UK

Woking Borough Council

Wolseley UK Ltd

Worcester Bosch Group

Worcester County Council

Worthing Homes

WSP Parsons Brinckerhoff

Wyn Prichard

Y

YTKO Limited

Z

Zac Goldsmith MP

Zero Carbon Hub Ltd

