The Chartered Institution of Building Services Engineers (CIBSE)

- CIBSE is the primary professional body and learned society for those who design, install, operate and maintain the energy using systems, both mechanical and electrical, which are used in buildings. Our members therefore have a pervasive involvement in the use of energy in buildings in the UK with a key contribution to sustainable development. Our focus is on adopting a co-ordinated approach at all stages of the life cycle of buildings, including conception, briefing, design, procurement, construction, operation, maintenance and ultimate disposal.

- CIBSE is one of the leading global professional organisations for building performance related knowledge with over 20,000 members worldwide. The Institution and its members are the primary source of professional guidance for the building services sector on the design, installation and maintenance of energy efficient building services systems to deliver healthy, comfortable and effective building performance.
1. **Overarching approach**: Who should have responsibility to pay for energy efficiency? Should energy efficiency be considered a national infrastructure priority?

1.1 CIBSE strongly believes that energy efficiency should be a national infrastructure priority and that a coherent vision should be articulated across all buildings and sectors. Energy efficiency is a key part of the national energy system, linked to other elements ranging from grid capacity to low carbon systems, therefore a systems thinking approach needs to be taken. With any system, the whole is different to the sum of its individual parts. If the desired outcome of a sustainable built environment balancing the economy, society and environment is the whole, then the policy parts should not be developed in isolation without regard for the relationships between them. There should be a national strategy to address technical, financial, policy and consumer aspects in a consistent and coordinated manner over a long-term timescale. There is history of a disjointed policy landscape when it comes to energy efficiency in the UK which has led to poor outcomes. Coherency and stability of policy over time is required to provide appropriate market signals to industry and business, and to provide the public with confidence that the Government is taking a long term view. Strongly enforced regulations are an essential tool, and should be tightened to drive energy efficiency improvements in new and existing buildings.

1.2 Improving energy efficiency of the building stock is a requirement to meet the UK’s carbon mitigation targets, and is one of the most effective options for increasing the resiliency of national infrastructure. Because of factors such as long-term returns, the frequent separation between parties that pay for energy efficiency works and parties that benefit from it, and non-economic factors such as the ‘hassle’ of refurbishment works, market mechanisms alone cannot be relied upon. The Government should have overall responsibility to put the appropriate levers in place to enable energy efficiency improvements in buildings to be implemented. These should be appropriate to each sector and will allow ‘who pays’ to be shared, for some, central public funding will be required whilst for others it can be funded privately as an investment. There are many local and international examples of successful incentives (e.g. via tax arrangements) and access to finance – see our response to later Questions for some of these examples. Market mechanisms alone have not, and will not, get us where the Climate Change Act commits us to be, where the Paris Agreement commits us to be, or where the basic atmospheric and climate change science demands that we go.

1.3 The levels at which energy efficiency schemes have been delivered in the past has been confusing; some are national whilst others are local, some are free whilst others are discounted or require loans, some are based on geographical area whilst others focus on incidence of fuel poverty. It is difficult for people to navigate through this maze and take action to make their homes and businesses more energy efficient. Schemes have been complex, not properly resourced and not given enough time to gain momentum or build capacity. Clear information, trusted supply chains and quality standards for energy efficiency improvements are key to delivery and currently are not consistent across the country; we acknowledge the recent introduction of the government-endorsed TrustMark, which is in its very early stages and which we hope will receive continued support so that industry can safely invest in it and consumers can start relying on it. CIBSE are also involved in PAS 2035 and other industry
initiatives to standardise approaches and raise competence, and we would be very happy to provide more information and advice to the Committee on this issue.

1.4 In terms of finances, we would note, as we have recommended to government in the past, that support to energy efficiency need not necessarily fully translate into additional funds; we strongly recommend an overall review of incentives to ensure they are aligned with policy objectives including fuel poverty, health, air quality, energy efficiency and carbon reduction. For example, funds currently allocated to winter fuel payments may instead provide an opportunity for retrofit works offered to residents, which would bring benefits not only in lowering their energy bills, but also in health, comfort, energy savings and carbon savings. We have detailed this in our response to the recent Future Framework for Heat consultation, and would also point to previous work by the Environmental Audit Committee on incentives that directly or indirectly support fossil fuels. A positive example of how policy has improved step-by-step is the gradual introduction of energy efficiency requirements to qualify for feed-in-tariffs or renewable heat incentive payments. This should be encouraged and continuously improved upon.

1.5 We would also welcome leadership by government and public bodies. One example is the use of Display Energy Certificates in public buildings. Spot checks on the Landmark Register show the following:
- The offices of the National Audit Offices are G-rated (!)
- There does not seem to be a DEC available for the offices of the Committee on Climate Change.
- Most of the buildings occupied by the Environment Agency are C-rated, which is relatively positive but does not seem to have improved over time; examples of A- and B-rated buildings would be very welcome.
- The Marsham Street office of Defra is E-rated.

1.6 There should be a strategy to update them every year, as the law requires for ALL public buildings visited by the public and over 1,000m² in floor area. If government is serious about reducing operating costs then there needs to be a strategy to improve them year on year. This would send a strong and positive example to industry and the public about the government’s commitments to energy and carbon savings, what can be achieved, and responsible use of public funds. It is quite inappropriate for government to be seen to be so systematically in breach of the Energy Performance of Buildings Directive, and the Committee may wish to explore this further.


2. **Existing housing stock:** Are the Government’s targets to improve the Energy Performance Certificate (EPC) ratings of our existing housing stock ambitious enough? Is there sufficient support in place to deliver targets for all homes to be EPC band C by 2035? Is the Energy Company Obligation (ECO) an adequate mechanism to ensure fuel-poor homes are upgraded to EPC band C by 2030?
2.1 In 2008, the country’s 26 million dwellings were estimated to be responsible for 27% of all UK CO₂ emissions (Utley and Shorrock 2008). According to forecasts then, 75-85% of the current UK building stock will still be in use by 2050 (Power 2008; Ravetz 2008). This is a major issue, since millions of these properties contain poorly performing solid walls, single glazing and un-insulated roofs/floors responsible for a significant amount of wasted heat. These features can be expensive and disruptive to improve, furthermore, improvement can be limited by available space and planning restrictions (Beaumont 2007, EEPH 2008). There is scope to retrofit these buildings to make deep cuts in CO₂ emissions, but effective implementation is no trivial task. Solutions must account for the variety in age, size, quality, composition, function and social value of the existing building stock, as well as the different needs, expectations and budgets of homes owners and occupiers. (Dowson et al 2012).

2.2 A strategy needs to be developed which targets the “trigger points” when energy efficiency works are easier and cheaper to carry out, in particular changes in ownership, lease, or other works that require planning permission and/or Building Regulations approval. Building Regulations Part L1B and L2B, which cover energy and carbon requirements for works to existing buildings, could be tightened and much better enforced. See details in:
- our recent response to the Future Framework for Heat¹
- our recent position paper on changes to Building Regulations Part L²

2.3 Other recommendations include:

- Targeted approaches for “hard-to-treat” dwellings.
- Market incentives to retrofit groups of houses at scale.
- Making it simpler for homeowners to access funding for retrofitting.
- Better confidence in pricing and workmanship.
- Websites that allow homeowners to enter some simple details about their properties and then a suite of costed retrofit packages is pulled together. Past examples have included a “go to the market” button where homeowners could see the local installers in their area who could do the work.
- Capital expenditure of measures should be driven down further and made more transparent.

2.4 ECO is not enough to ensure that fuel-poor homes are upgraded to EPC band C by 2030. In principle we welcome the news that companies that wish to undertake work funded by government, such as ECO, will have to be accredited, as this could help raise standards.

3. Private rented sector: Are the Government's private rented sector regulations for energy efficiency for both residential and commercial buildings ambitious enough? Are there implementation and enforcement challenges that need to be remedied?

3.1 The standards to be achieved should be timetabled at least three years in advance to allow owners to plan integrated upgrades or to dispose of properties to others who will improve. Due to past government uncertainty and changes in policy, private landlords could wait until the last minute to see if the regulations will actually be enforced. Robust enforcement and tightening

² https://www.cibse.org/getmedia/4a601f5c-a866-41a2-8cf7-1bab17f4f57e/Position-Paper-on-Building-Regulations-Part-L-F.pdf.aspx
over time will be required to avoid less responsible landlords taking advantage of exemptions as loopholes.

3.2 CIBSE has also long expressed concern about the lack of enforcement and low levels of compliance with all the certification aspects of the Energy Performance of Buildings Directive which undermines their effectiveness. Ever since the EPB regime was introduced, under the previous administration, there have been problems with enforcement. These are not just anecdotal, but can be clearly documented by recourse to written answers to Parliament and data which is on the public record.

3.3 We have recently commented in detail on the **Minimum Energy Efficiency Standards** regulation, please refer to our response for detail. In short, we believe it is a missed opportunity to:

- Help with fuel poverty objectives, particularly as fuel poverty levels are much higher in poor efficiency housing.

- Maximise the benefits of works when they are carried out: the current regulations only require an E-rating, without trajectory for the longer-term objective of C ratings (or better). This means some properties may require a second stage of works in the near future, which increases costs and disruptions. Meet policy objectives: the landlord cap (even the slightly increased value confirmed by government post-consultation) is acknowledged by government itself only to address just over half of F and G rated properties. This seems a very ineffective and un-ambitious use of regulations.

4. **Regional disparities**: Are there regional disparities, including in off-grid areas, in the delivery, costs and uptake of energy efficiency measures? If so, how could these be overcome?

4.1 We believe there is disparity as some local and regional authorities have developed schemes to encourage the take-up of energy efficiency, often also trying to address issues such as poor health and fuel poverty. For example in recent years the London boiler cash back scheme and London energy efficiency fund, Home Energy Efficiency Programme Scotland (HEEPS), Welsh Government Warm Homes Nest scheme, Better Housing Better Health in Oxfordshire. Greater central coordination and support (as mentioned previously) to roll out complementary initiatives at a local level would help to overcome some disparities.

5. **Non-domestic sector**: What does existing evidence indicate about progress being made towards greater energy efficiency in public and commercial buildings?

5.1 Energy Performance Certificate and Display Energy Certificate data for buildings in England and Wales is available online, which would be the primary source of evidence to indicate if energy efficiency progress is being made in a large proportion of buildings. We would note this is very much an under-utilised resource, as the data in the Landmark Register is often of poor quality, not regularly updated, and not easy to access; in particular, it is mostly accessed building-by-building, rather than accessible as an overall database which would allow easy processing and analysis, turning data into useful information. Improving the quality and functionality of the register would be a relatively low-cost measure which could have significant
value to industry, government and academia, including helping to identify trends and best practice.

5.2 Despite many inspiring energy efficiency initiatives implemented by organisations in the public and commercial sectors, there is still a great deal more to be done.

5.3 The primary control on the energy efficiency of new or refurbished buildings is Part L of the Building Regulations. CIBSE has recommended that the review of Part L should look at introducing energy targets in conjunction with carbon targets, and that the regulations should encourage demand management. There should also be a transition to regulations based on operational outcomes and better overall enforcement of building regulations.

6. Lessons to learn: *What lessons can be learnt from the devolved administrations on delivering energy efficiency measures?*

6.1 There are many examples of best practice energy management and retrofit, for example Passivhaus retrofit projects, Energiesprong and the ‘hard to treat’ heritage sector. For specific case studies, we would point to the annual CIBSE Buidling Performance Awards, which include the categories of refurbishment, energy management, and energy saving products.

6.2 We would point to Buildupon [http://buildupon.eu/initiatives/](http://buildupon.eu/initiatives/), a resource developed by the European Green Building Council that gathers examples across Europe of measures to encourage better retrofit strategies, categorised into:

- Awareness raising
- Skills and capacity building
- Financial & economic measures
- Policy and regulations.

6.3 Scotland made energy efficiency a national infrastructure priority in 2015, in recognition of the many benefits of improving the energy performance of Scotland’s buildings. The Energy Efficient Scotland [route map](http://buildupon.eu/initiatives/) sets out how direct and supporting actions will be taken to improve the use and management of energy in Scotland’s buildings.

6.4 There are also international initiatives which are being applied in the UK, such as Design for Performance which aims to change the way we design new office developments based upon the successful Australian NABERS office energy rating scheme. This targets the actual in-use energy performance of the ‘base building’ (services typically under the control of the property owner i.e. the heating, hot water, ventilation and air-conditioning of the whole building, light and power in common areas, and the lifts). A framework has been established whereby clients, developers and their teams sign up to and then follow a ‘Commitment Agreement’ protocol to design, construct and manage buildings to achieve agreed levels of actual in-use performance. Since its introduction in 2002, its effect has been transformational and as a consequence created a design-for-performance culture, with typical new office base buildings using about half the energy they did when the system was introduced and the very best one-fifth as much.