The respondent is The Chartered Institution of Building Services Engineers (CIBSE).

CIBSE is the professional body that exists to:

‘support the Science, Art and Practice of building services engineering, by providing our members and the public with first class information’

CIBSE members are the engineers who design, install, operate, maintain and refurbish the energy using systems installed in buildings, including homes, and are specifically trained in the assessment of heat loss from building fabric and the design of energy using systems for the provision of heating and hot water, lighting, ventilation and cooling and small power distribution in homes.

CIBSE is the sixth largest professional engineering Institution, and along with the Institution of Structural Engineers is the largest dedicated to engineering in the built environment. Our members design, install, manufacture, maintain, manage, operate and replace all the energy using systems in buildings as well as public health systems. CIBSE has over 20,000 members, of whom around 75% operate in the UK and many of the remainder in the Gulf, Hong Kong and Australasia.

As an Institution CIBSE publishes Guidance and Codes which provide best practice advice and are internationally recognised as authoritative. The CIBSE Knowledge Portal makes our Guidance available online to all CIBSE members and is the leading systematic engineering resource for the building services sector.

www.cibse.org

EXECUTIVE SUMMARY

§1. CIBSE have long advocated for the potential and duty of the public sector to demonstrate leadership, give confidence to the industry about policy direction, and help build market capacity for a low carbon UK. We therefore very much welcome this inquiry. We believe the government’s current plans for achieving zero carbon on their estate fall very short of the required extent, commitment and speed. This risks undermining public confidence in the UK’s commitment to net zero, prevents useful experience being developed and applied in other sectors, and delays the achievement of the target since the public sector is in itself a significant contributor to the UK’s carbon emissions. CIBSE have carried out extensive work and published best practice guidance and policy recommendations on this topic for the past 15 years, and we would be happy to support the work of the Committee in this area.

§2. We have identified the following key areas where the public sector has a duty and opportunity to drive the transition to zero carbon, and our response is structured accordingly:

• Developing and implementing a “net zero public estate” action plan: §3-8
• Adopting exemplar procurement practices, for quality and high performance outcomes: §9-12
• Developing net zero building standards, and driving the market by adopting them on public buildings: §13-19
• Strengthening and expanding **performance disclosure** requirements, including Display Energy Certificates (DECs): §20-25
• Supporting **innovation** §26.

See §27 for details of how individual inquiry questions are addressed in our response.

DEVELOPING AND IMPLEMENTING A “NET ZERO PUBLIC ESTATE” ACTION PLAN
§3. Currently, the government’s plans for achieving net zero carbon on its estate are unclear, both in terms of the actions to take and the timeline. Existing measures are limited in scope and timescale (e.g. 43% reduction by 2020), as is evidenced by the poor adoption of Display Energy Certificates (DECs - see §20-§25). We recommend the production of a clear plan with actions, deadlines, responsible parties, and reporting mechanisms; this could be similar to the tracking of the UK’s progress through carbon budgets, but at the level of the public estate.

§4. As part of this “net zero public estate plan”, government should provide guidance to individual organisations, such as local authorities: there is an increasing number of public organisations having declared ambitions to become zero carbon. Some are developing comprehensive plans, for example the Greater Manchester Combined Authority¹, West Yorkshire Combined Authority and Leeds City Region Enterprise Partnership², and Haringey³, which cover areas of public sector direct responsibility (buildings, fleet), areas of influence (planning, infrastructure), and the wider sphere through partnership with other organisations. However, on the whole, there is currently little consistency over how zero carbon is interpreted and how to achieve it. There should be significant efficiencies in costs and efforts if support was provided by government in order to apply consistent methods, share lessons, and deliver the overall objectives of achieving carbon reduction, developing the market capacity and skills required for a low-carbon economy, and supporting innovation.

§5. Central guidance would help avoid the risk of double-counting carbon savings across several departments or organisations; in particular, there should be clarity on how “green tariffs” and “carbon offsets” are counted and declared, as they could otherwise jeopardise the outcome of achieving the overall target for the UK, and undermine public confidence if the energy consumption and costs of buildings remain high despite a “zero carbon” statement.

§6. Central guidance should require that zero carbon transition plans apply a holistic strategy, including other objectives such as air quality, health, comfort, and climate change adaptation. We need to avoid the risk that, with a focus on carbon emissions, measures are adopted without consideration of the wider picture. Many measures will bring multiple benefits, and these need to be identified and prioritised. Examples of risks and opportunities include: considering the impact of low carbon heat sources on running costs and air quality; coordinating tree-planting and green infrastructure strategies across departments (e.g. planning, estate management, highways) to deliver the multiple benefits in terms of carbon emissions, air quality, access to green space, urban heat island etc; adopting whole-building approaches to low-energy retrofit, to reduce energy bills and improve winter comfort while giving attention to indoor air quality and overheating risk mitigation.

§7. Central guidance should also help public sector organisations set priorities that ensure a fair transition to zero carbon. For example, this could prioritise works to council housing, schools, and other public buildings that could benefit vulnerable populations.

§8. In turn, each central department could provide guidance and implementation timelines more specific to their sector, to capture specific challenges and opportunities. For example, schools will typically have relatively large external grounds for tree planting and roof areas for PVs, while hospitals and leisure centres will need more guidance on low-carbon heat and hot water generation.

ADOPTING EXEMPLAR PROCUREMENT PRACTICES, FOR QUALITY AND HIGH PERFORMANCE OUTCOMES

¹ www.manchesterclimate.com/plan
§9. Government needs to procure for quality and outcomes that match its policy objectives, not for the lowest cost and minimum regulatory compliance. By contrast and for example, the energy performance requirement for new schools is merely to comply with Building Regulations Part L2A, far from being truly low, let alone zero, carbon. Suitable criteria, and monitoring to check the delivery of outcomes, need to be embedded in procurement processes. The Government Soft Landings framework provides an opportunity to do this.

§10. Training and resources need to be provided to those in charge of procurement, who otherwise may be tempted to adopt a lowest cost option. The message needs to be clear: “value” is not financial only, and public procurement needs to take account of environmental, social, health and wellbeing factors.

§11. We have provided a more detailed commentary on this issue in our response to the recent consultation on Social Value4 – in particular, we highlighted that the criteria currently proposed under “environmental sustainability” do not mention climate change, carbon emissions, and adaptation; this clearly must be addressed.

§12. This approach to procuring for value must apply to public buildings and works to existing buildings. For buildings owned by the public sector, contractual net zero carbon targets need to be applied and verified in operation – see details in §13-18. Where public sector organisations are tenants, they should commit to only occupying buildings that achieve exemplary on-site performance (e.g. at least, a DEC-rating of A), that have low-carbon heat supplies, and a clear plan for fast transition to zero carbon; such a commitment would send a clear signal to the rest of the market, as has been the case with the adoption of NABERS in Australia, initially driven by public organisations as occupiers.

DEVELOPING NET ZERO BUILDING STANDARDS, AND DRIVING THE MARKET BY ADOPTING THEM ON PUBLIC BUILDINGS

§13. As recent reports by the Committee on Climate Change and BEIS Select Committee make clear, government must develop plans to reduce energy consumption and carbon emissions from buildings in order to put the UK on track to achieve the 2050 net zero target, and this must start with the upcoming 2019/20 review of Building Regulations of Part L. CIBSE are on MHCLG working groups for this review, and we have produced a briefing5 on our recommendations, which we would be happy to discuss with the Committee. In summary, we think that all new buildings should operate as net zero carbon by 2030, which would require them all to be designed to net zero carbon by 2025 i.e. the next anticipated Part L review. The carbon performance under Building Regulations Part L should be measured in operation (not as a theoretical as-built target, as Part L currently works), and should include emissions from all energy uses rather than only those currently regulated (i.e. heating, hot water, cooling, ventilation and lighting, excluding all other uses such as cooking, lifts, IT, appliances etc, which can represent a significant part of energy use and carbon emissions). Existing buildings should follow a similar trajectory, though with a delay of a few years to account for the particular challenges of retrofit.

§14. For the avoidance of doubt, we stress that the net zero carbon target under Part L should be based on significant on-site measures (passive design, energy efficiency, and low-carbon supplies); it should not be simply through adoption of a “green tariff”. We are not detailing here how this would translate into technical performance requirements; we have covered this extensively in separate reports and as part of the MHCLG Part L working groups, and would be happy to provide more details to the Committee.

5 https://www.cibse.org/News-and-Policy/Policy/Key-Technical-Themes-for-2019/Building-Regulations
§15. Another key recommendation for implementation from 2019/20 is for Part L to include a requirement for disclosure of energy use and carbon emissions - see details in §20-22 and §24.

§16. These recommended changes to Part L requirements are significant and challenging; they may require new ways of working and contractual set-ups (e.g. shared insurance across project teams, towards a common goal of achieving zero carbon in operation); skills that already exist within market leaders must become widespread and consistently applied. However, these challenges are in line with that of achieving net zero as a whole for the UK, with every sector having to contribute as much as possible. In order for the built environment industry to have developed the required capacity by 2025, we therefore strongly recommend that the public sector should adopt the proposed future Part L requirements ahead of the rest of the market: all new public buildings should be designed now to be net zero operational carbon from 2019/20, ahead of requirements for the rest of the market by 2025. This should be adopted as a contractual performance target, and verified in operation. This would demonstrate commitment, support investment by giving confidence in policy direction, help build market capacity, and contribute to the overall UK’s net zero target. It should also lead to significant operational costs savings, allowing public organisations to spend more of their often-stretched budget on their core purpose such as education and health provision.

§17. A timetable should also be set for all existing buildings to achieve net zero, and again, the public sector should be at least one step ahead of the rest of the market. See also §12 on buildings occupied, but not owned, by the public sector.

§18. Applying contractual performance targets has been identified as a key driver to achieving good operational performance. There are several examples of schemes which apply such targets, and an increasing number of UK organisations experienced in these schemes: see for example the recent Green Construction Board Buildings Energy Mission background report. However, current adoption in the UK is nowhere near the required scale and rate, hence the need for the public sector to support it, as happened at the early stages for many best practice schemes across the world (e.g. Passivhaus and Enerphit in Germany, Energiesprong in the Netherlands, NABERS in Australia).

§19. As an aside, and bearing in mind the focus of this inquiry on the government estate rather than wider policy, we would also highlight that in order to be able to regulate for operational performance, government needs to urgently explore legislative options. In our Part L briefing paper we have identified a number of possible avenues, such as modifying the Building Act or Energy Performance of Buildings Regulations – these need to be explored as soon as possible to ensure the legislative context is ready in a timely manner. We also think that adopting the 2025 revised Part L requirements (i.e. based on all energy uses, and on operational targets) should be available as an option for early adoption by market leaders, further helping to build the market and providing lessons to MHCLG for the 2025 Part L review.

STRENGTHENING AND EXPANDING PERFORMANCE DISCLOSURE REQUIREMENTS, INCLUDING DISPLAY ENERGY CERTIFICATES (DECS)

---

§20. The DEC regime was initially intended to drive reductions in energy consumption and carbon emissions by requiring regular energy management reviews by building occupiers or owners, and by raising awareness and expectations among the public of the energy consumption and running costs of public buildings. As we have repeatedly highlighted over the years, it has very much failed to do so and needs an overhaul of requirements and enforcement. As illustration and without wishing to “point the finger”, we would highlight the poor ratings of several prominent department buildings e.g. the National Audit Office building is E-rated (albeit an improvement from its 2018 rating of F), and so is the Home Office at Marsham Street, also hosting MHCLG.

§21. Among the many failings of the DEC enforcement regime, we would highlight the following: many public buildings do not have up-to-date DECs, or even none at all; DECs are not displayed prominently enough to generate interest from the public; the national register is not easily accessible for analysis, as buildings have to be searched individually rather than with an easy search by, say, building type or ventilation type; data is often of dubious quality (e.g. some buildings seemingly A-rated have actually entered “zero” for their energy consumption, which is clearly flawed) – see for example an overview of DEC A-rated General Office entries in the recent Green Construction Board report.

§22. Government must achieve compliance of its own estate, ensure that public buildings prominently display DECs, and that these are based on good quality and up-to-date energy data. Managers of public buildings must be reminded of their duties, and be given suitable resources to implement them.

§23. This should go hand-in-hand with a programme of analysis and improvement, both at the level of individual buildings and of trends per building types. This programme could link to the overall plan for the whole public estate, as per §3-8. It should identify measures that require investment, to be integrated into the overall asset management plan, as well as known “low hanging fruit” low-cost measures such as re-commissioning and best practice maintenance and energy management, which often lead to significant energy savings and occupant comfort improvements.

§24. While this is not specifically related to the public estate itself, we also stress that the DEC rating system needs updating and improving. First, it needs to be based on updated energy benchmarks, rather than using the CIBSE TM46 benchmarks, which date back to 2008. CIBSE have recently updated their benchmarks; we have given presentations to MHCLG and BEIS on this, and would be very happy to discuss how this could feed into an updated DEC rating system. Other changes should be implemented to better account for different building types and occupancy patterns (e.g. unusually low or high occupancy hours and densities). Significant feedback has been gathered over the years, which could and should inform this review.

§25. Further feedback to MHCLG on how to improve the system should be provided through better enforcement and prominence of public DECs, as recommended in §20-21. As we have been advocating for a number of years, we also strongly recommend extending the current requirements for energy performance disclosure: this should apply to new buildings and works to existing buildings, through Building Regulations Part L (see §15), and to all existing commercial buildings. Government consulted on extending the requirements to commercial buildings in 2010, and it received overwhelming support from respondents (93%), but was not implemented.

SUPPORTING INNOVATION

§26. Most of the recommendations we have made here relate to adopting and enforcing existing best practice, rather than requiring new knowledge, systems, or products. However,
there will be areas which will require support to reach market and be widely adopted. One way to support this is by clear commitments and stability of policy. Another is by adoption by the public sector. We have highlighted the need for this in terms of developing market capacity for operational performance target. Other areas where the public sector could **build knowledge and drive technical innovation** include: demand management, including thermal and electrical storage; low-carbon heat, especially in hard-to-treat properties and in existing heat networks served by fossil fuel plant and high-temperature distribution systems; and the integration of vehicles and buildings as both electrify (e.g. shared batteries). This could be supported through a programme of implementation, monitoring and lessons gathering, as part of the wider plan for turning the public estate into a net zero estate.

§27. REFERENCES TO SPECIFIC QUESTIONS OF THE INQUIRY:

**Achieving a net zero government**

*What must be done to achieve a net zero government?*

We have responded to this along the following key themes:

- Developing and implementing a “net zero public estate” climate action plan: §3-8
- Adopting exemplar procurement practices, for quality and outcomes: §9-12
- Developing net zero building standards, and driving the market by adopting them on public buildings: §13-19
- Strengthening and expanding performance disclosure requirements, including Display Energy Certificates (DECs): §20-25
- Supporting innovation §26.

The following principles apply across all themes: demonstrating commitment, giving confidence about policy direction, and helping to develop market capacity.

*What time frame is required for government to achieve alignment with net zero emissions?*

See our recommended timeframe for public buildings in §13, §16, §17.

*What challenges might government encounter as part of this process? How could these be overcome?*

See §3-8 on the need for consistency across departments and organisations, and avoiding double-counting; and §16 and §18-19 on regulating for operational performance of buildings

*How should net zero targets be set, monitored and enforced?*

See §3-8 on targets across the public sector estate, §9-12 on targets through procurement, and §13-19 on targets for buildings

*What must government do to ensure a just transition and decent work as it moves its estate towards net zero?*

See §8

**Leadership and partnership**

*To what extent is government “leading by example” in aligning its estate and operations with net zero emissions?*
What examples of good practice could government implement to become a net zero government?

See §4 on examples of public organisations, and §18 on contractual low-energy and low-carbon targets.

How can the government report on and reduce its carbon footprint?

See §3-8 on the production of an overall plan; see §20-25 on disclosure on individual buildings.

Is government following its own advice?

Are existing government frameworks ambitious enough to meet the requirements set out by the Committee on Climate Change?

See §3 overall, §11 on procurement, and §20 on individual buildings.

What must be done to align the new set of Greening Government Commitments with a net zero government?

See §6.

How can the government’s estate be more climate friendly?

See §6.