ESTA RESPONSE TO:

Committee on Climate Change (CCC)
Building a zero-carbon economy – Call for Evidence

To: Committee on Climate Change (CCC)
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NB: Happy for this response to be published

ESTA Energy Services and Technology Association
ESTA is the UK Industry Body representing suppliers of products, systems and services for Energy Management. Members include energy consultants, aM&T providers, controls manufacturers through to full Energy Services/Energy Performance Contracting mainly working in the non-domestic sector.

ESTA is engaged with UK Government policies on Energy and Climate Change and initiatives considering the efficient use of energy in process, buildings and in staff engagement. It also provides UK input to developing international energy management standards and is represented on several BSI committees.

ESTA members are key to the UKs realisation of a low carbon, secure and affordable energy future. Our members provide equipment, systems and services for energy management to reduce energy demand at source and including renewables.

At the heart of everything we do is our aim to help our members improve their industry sector, business connections and enhance opportunities to market. We believe that our members business success is the essential precursor for real improvement in energy efficiency in the UK.

Our response is based on feedback primarily from our members. Where ESTA members respond directly, they may offer differing opinions on some issues, which we respect as expressing their own definitive view.

Building a zero-carbon economy - Call for Evidence

ESTA welcomes the opportunity to feedback on this important issue and continues to provide its support and input aimed at furthering the implementation of energy efficiency measures and enablers in the UK.

ESTA is well positioned to be able to provide expert insight into what is required in terms of maximising energy efficiency measures as well as what is needed to further the efficient use of energy.

This opportunity to support business in its pursuit of better energy use culminating in reduced emissions is an important step forward in the aim or delivering a continued energy strategy across business. We encourage all government policies to provide an open, transparent and level playing field to enable development and innovation that new entrants and expert service providers can bring.

ESTA's members through its groups provide a great platform to make progress in this area and we look forward to the work undertaken by stakeholders in this sector to deliver a successful outcome for the future of energy reduction towards a zero-carbon economy in the UK.

Consultation questions and responses begin on the following page:

Question and response form

When responding, please provide answers that are as specific and evidence-based as possible, providing data and references to the extent possible. Please limit your response to a maximum of 400 words per question.

Part 1: Climate Science

Question 1 (Climate Science): The IPCC's Fifth Assessment Report and the Special Report on 1.5°C will form an important part of the Committee's assessment of climate risks and global emissions pathways consistent with climate objectives. What further evidence should the Committee consider in this area?
ANSWER:

Question 2 (CO_2 and GHGs): Carbon dioxide and other greenhouse gas gases have different effects and lifetimes in the atmosphere, which may become more important as emissions approach net-zero. In setting a net-zero target, how should the different gases be treated?
ANSWER:

Part 2: International Action

Question 3 (Effort share): What evidence should be considered in assessing the UK's appropriate contribution to global temperature goals? Within this, how should this contribution reflect the UK's broader carbon footprint (i.e. 'consumption' emissions accounting, including emissions embodied in imports to the UK) alongside 'territorial' emissions arising in the UK?
ANSWER:

Question 4 (International collaboration): Beyond setting and meeting its own targets, how can the UK best support efforts to cut emissions elsewhere in the world through international collaboration (e.g. emissions trading schemes and other initiatives with partner countries, technology transfer, capacity building, climate finance)? What efforts are effective currently?
ANSWER:

Question 5 (Carbon credits): Is an effective global market in carbon credits likely to develop that can support action in developing countries? Subject to these developments, should credit purchase be required/expected/allowed in the UK's long-term targets?
ANSWER:

Part 3: Reducing emissions

Question 6 (Hard-to-reduce sectors): Previous CCC analysis has identified aviation, agriculture and industry as sectors where it will be particularly hard to reduce emissions to close to zero, potentially alongside some hard-to-treat buildings. Through both low-carbon technologies and behaviour change, how can emissions be reduced to close to zero in these sectors? What risks are there that broader technological developments or social trends act to increase emissions that are hard to eliminate?

ANSWER:
Data on the efficacy and business case for energy efficiency:
Increased action on energy efficiency, would be facilitated by more data being made available.

Data is difficult to find because it is protected by commercial interests. It would be useful if government could collect data that could be used to prove the efficacy of energy efficiency projects in order to promote wider take up by more businesses (including SME's who lack the resources to conduct research themselves).

Proactive communication with all sectors on energy efficiency using proven case study data to illustrate the benefits of the variety of energy efficiency measures would help to stimulate take up. In particular, the data should explain the business case for energy efficiency across the full range of potential interventions whether energy is a core or non-core cost for the organisation.

Question 7 (Greenhouse gas removals): Not all sources of emissions can be reduced to zero. How far can greenhouse gas removal from the atmosphere, in the UK or internationally, be used to offset any remaining emissions, both prior to 2050 and beyond?

ANSWER:

Question 8 (Technology and Innovation): How will global deployment of low-carbon technologies drive innovation and cost reduction? Could a tighter long-term emissions target for the UK, supported by targeted innovation policies, drive significantly increased innovation in technologies to reduce or remove emissions?

ANSWER:
At a building level, a greater take up of existing low carbon technologies are still required.

New Buildings:

- Review carbon emissions factors in Part L, update to annual DEFRA factors so that electrical solutions are not warped.
- Review CIBSE design guides to reduce the over engineering of solutions, particularly lighting and hot water provision (especially hot water in schools)
- All new builds (domestic and non-domestic) to be EPC A rated (as in Ireland) with immediate effect, to prevent further infrastructure being created that later needs more expensive retrofitting to upgrade its energy efficiency.
- Include in all builds (domestic and non-domestic) mandatory electric vehicle charging points to assist with carbon reduction in the transport sector through built environment providing infrastructure.
- Include mandatory commission of control systems that is actually enforced.
- In non-domestic buildings, install sufficient electricity sub meters so that individual

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sections (floors, separated floor areas, etc.) so that their consumptions can be monitored and recorded. Where the total consumption is less than 100kW, any area consuming more than an estimated 10% should be monitored; over 100kW, any area consuming more than an estimated 5% should be monitored. A reporting system should also be provided so that building management can easily monitor & control consumptions.

Existing Buildings:

- Discontinue the sale of all new halogen and fluorescent light fittings (including T5s)
- Phase out over the next three years the sale of all halogen lamps and fluorescent light tubes, mandating change to LED upon bulb failure.
- Increase scope of Energy Company Obligation so that it can offer funded energy saving solutions to registered charities as well as domestic
- Enforce existing ACI/TM44 legislation and require mandatory action on a specific category of recommendations where there is gross failings
- Create a new requirement for controls systems to be checked and certified for efficiency settings every say 3 years
- Have a time limited scrappage scheme for inefficient light fittings / white goods / pups & motors.
- Create a SALIX style scheme for SME's (zero interest loan fund which gets recycled), which could be funded by energy company fines rather than the obscure schemes that have/are run.
- Require all retailers to shut non-automatic doors as soon as the outside temperature falls below 14 degrees.
- In the refurbishment of non-domestic buildings, install sufficient electricity sub-meters so that individual sections (floors, separated floor areas, etc.) consumptions can be monitored and recorded. Where the total consumption is less than 100kW, any area consuming more than an estimated 10% should be monitored; over 100kW, any area consuming more than an estimated 5% should be monitored. A reporting system should also be provided so that building management can easily monitor & control consumptions.

All buildings

- Where a non-domestic building has metering installed, either in compliance with these requirements or otherwise, an annual report to be prepared comparing current year consumption to previous years including reasons for the change (the Drivers for change) and any investments made to improve energy efficiency. The reports to form part of the organisation's annual report.

Question 9 (Behaviour change): How far can people's behaviours and decisions change over time in a way that will reduce emissions, within a supportive policy environment and sustained global effort to tackle climate change?

ANSWER:
Behaviour Change has been proven* to provide huge potential benefit for industrial organisations with this representing at least 50% of the available energy savings available (the other 50% being through technical projects), yet little emphasis (and support) is given

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by government to tackle this critical area.

It is considered that until such behaviour change programmes can be proven on mass that 'they really do work!' (rather than they sound like they ought to work) then the work required at scale to deliver this underestimated but significant emissions reduction opportunity will continue to be missed by the majority.

ESTA have amongst its members a number of well-established behaviour change specialists with an excellent track record. It has been shown that savings from long term behavioural programmes can potentially save as much in emissions reductions as can be saved via technical projects but as stated in our response to question 6 much more evidence-based case studies are required to move this huge opportunity forward to make this fact more widely understood.

There are many facets to behaviour change which all need to be tacked together and over a sustained period after which customers will find the practices embedded within their organisations.

However, to get there, specialist support and guidance is required. ESTA are now driving a behaviour change group (with the support of Energy Institute) with the aim in the next 2-3 years of getting between 50-100 industrial and commercial organisations that can prove (using IPMVP – the International Protocol for the Measurement and Verification of Projects) these significant benefits.

Through Government support being able to offer financial support in the form of grants for those organisations wishing to participate in behaviour change programmes, would expedite a boost in the number of organisations proving that this approach is both effective and affordable.

Policy for an end user is just one of many facets of Behaviour Change. Immediate Government Policy change to support Behaviour Change programmes would accelerate implementation and make approaching Behaviour Change a common approach in 2 – 3 years' time.

*ESTA have a handful of cases proven through IPMVP

Question 10 (Policy): Including the role for government policy, how can the required changes be delivered to meet a net-zero target (or tightened 2050 targets) in the UK?

ANSWER:
A major obstacle to maximising energy savings is the problem that "if something is not compulsory, most people don't bother to act".

The current building regulations for lighting and lighting controls state that there is a minimum average amount of lumens of light that should be generated per watt of electricity used. There is no mandate to install automatic energy-saving lighting controls for general task lighting – even though there is overwhelming evidence that automatic controls save significant amounts of energy.

Similarly, for larger organisations ESOS reports must be carried out, but there is no

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mandate to make the improvements recommended by the reports. In practice, many ESOS report recommendations are not followed through, and the energy (and cost) saving opportunities are wasted.

Part 4: Costs, risks and opportunities

Question 11 (Costs, risks and opportunities): How would the costs, risks and economic opportunities associated with cutting emissions change should tighter UK targets be set, especially where these are set at the limits of known technological achievability?

ANSWER:

Question 12 (Avoided climate costs): What evidence is there of differences in climate impacts in the UK from holding the increase in global average temperature to well below 2°C or to 1.5°C?

ANSWER:

Part 5: Devolved Administrations

Question 13 (Devolved Administrations): What differences in circumstances between England, Wales, Scotland and Northern Ireland should be reflected in the Committee's advice on long-term targets for the Devolved Administrations?

ANSWER:

Part 6: CCC Work Plan

Question 14 (Work plan): The areas of evidence the Committee intend to cover are included in the 'Background' section. Are there any other important aspects that should be covered in the Committee's work plan?

ANSWER:
The UK's role in carbon and emissions reduction can only succeed through the application of technology and solutions to areas **where energy is a non-core cost**, such as in SME's or at the other end of the spectrum where energy savings are made solely at a plant process or industrial level and not associated services, buildings and offices. It would be good to encourage Government to begin to tackle this issue.