Department for
Business, Energy
& Industrial Strategy

Energy-Related Products

Call for Evidence

Closing date: 4 September 2020

June 2020

Any enquiries regarding this publication should be sent to us at:
enquiries@beis.gov.uk

Contents

Executive summary

In 2019, the UK became the first major economy in the world to pass legislation to end its contribution to global warming by 2050. A target was set requiring the UK to bring all greenhouse gas emissions to net zero by this date. This is significantly more ambitious than the previous target of at least 80% reduction from 1990 levels and will require more innovative and effective climate policies.

The net zero target is also a real opportunity for the UK to demonstrate strong global leadership in climate change policy as our relationship with Europe and the rest of the world enters a new era.

This Call for Evidence explores how effective policies for energy-related products in homes and businesses can support the UK's transition to net zero by 2050.

Energy-related products are goods, such as washing machines, lighting equipment and televisions, which use energy or affect energy consumption when in-use or in standby mode. In total, they make up approximately 55% of total (non-transport) energy use in the UK[1] and are currently regulated under three policies in the UK:

- Ecodesign
- Energy Labelling
- The Energy Technology List ('ETL')

Ecodesign sets minimum energy performance standards for products which gradually push the least energy efficient products off the market. Ecodesign requirements can also facilitate progress towards a more circular economy by setting requirements relating to aspects of a product's resource efficiency, at any point in the product lifecycle from production to end-of-life. These include material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery.

Energy labels aim to drive the uptake of the most energy efficient products by providing consumers with information on their energy performance rating at the point of purchase. They are also intended to promote competition amongst manufacturers to develop more energy efficient products; reduce energy use and consumer bills; and ultimately reduce carbon emissions.

The ETL is a UK energy efficiency scheme that encourages private and public sector organisations to procure energy-saving or energy efficient plant and machinery; and since its inception in 2001, the ETL has grown to include around 14,000 products across 16 technology groups. It aims to simplify investment decisions and help overcome information barriers, as well as reduce transaction costs for buyers, sellers and the public sector.

The ETL is not covered in this Call for Evidence as BEIS is consulting on it separately[2]. That consultation will be run in two parts. Part one sets out the future policy direction for the ETL

[1] BEIS estimates on data from: (1) 'Saving Energy Through Better Products and Appliances', 2011 – using policy estimates from 2020; (2) 'Energy Consumption in the UK', 2018

[2] For more information on the ETL Consultation, see: https://beisgovuk.citizenspace.com/energy-efficiency/etl

that BEIS intends to follow; and part two explores the technical aspects of the proposed changes to the Energy Technology Criteria List for 2020.

To date, Ecodesign and Energy Labelling policy (collectively 'products policy') measures have been set at an EU level and have subsequently taken direct effect in all Member States. The UK left the EU on 31 January 2020 and following the end of the transition period on 31 December 2020, we will regain control over our economic and political independence. This means we will be able to set our own products policy measures to maximise benefits for UK consumers and businesses.

This Call for Evidence invites views on the effectiveness of Ecodesign and Energy Labelling policies to date; how they can be improved; and whether the subset of products listed in section 2 of this document can deliver additional energy, resource efficiency and carbon savings through better minimum energy performance, and resource efficiency, standards.

The information and data gathered in this document will be used to build up an evidence base on how to improve the effectiveness of products policy. This will, in turn, be used to inform a set of policy options that will be subject to a formal Consultation.

General information

Call for Evidence details

Issued: 12 June 2020

Respond by: 4 September 2020 (midnight)

Enquiries to:

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Call for Evidence reference: Energy-Related Products: Call for Evidence

Audiences:

This Call for Evidence invites views from trade bodies, manufacturers, importers, exporters, distributors, retailers and consumers of energy-related products in the domestic, non-domestic and commercial sectors.

Territorial extent:

The United Kingdom. Ecodesign and Energy Labelling is a reserved policy and will remain so after the end of the transition period on 1 January 2021. Views from stakeholders across the UK would be welcomed.

How to respond

Your response would be most useful if it is framed in direct response to the questions posed, providing evidence and/or data wherever possible. The first two sections of this Call for Evidence are seeking stakeholder views on a wide range of energy-related products and we understand that not all products will be relevant to your specific interests. It is, therefore, not necessary to provide views for all the product sections and we would invite you to respond to those product sections which are of relevance to you and/or where you can provide relevant evidence.

Responses should be provided online via Citizen Space unless there is a clear reason not to do so. In this instance, respondents should contact BEIS for information on how to provide a response through alternate means. Citizen Space allows for additional features, such as ranking of options, that will improve the analysis of responses.

Respond online at: https://beisgovuk.citizenspace.com/energy-efficiency/recharging-uk-energy-related-products-policy/

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: beis.bru@beis.gov.uk.

1. Introduction

This Call for Evidence is primarily relevant to manufacturers, importers, exporters, distributors, retailers or consumers of energy-related products in the domestic and non-domestic sectors. Energy-related products are those products which have an impact on energy consumption during use. This includes energy-using products, such as washing machines, lighting equipment and televisions, which require energy when in use and/or in standby mode as well as products that have an indirect impact on energy consumption such as water-using products. It seeks evidence on how existing policies can be improved to deliver additional energy and carbon savings in the UK to help meet the Government's commitment to becoming a carbon neutral economy by 2050.

To date, products policy measures have been set at an EU level and have subsequently taken direct effect in all Member States. The UK left the EU on 31 January 2020 and following the end of the transition period on 31 December 2020, we will regain control over our economic and political independence. This means we will be able to set our own products policy measures to maximise benefits for UK consumers and businesses.

Products policy has always been a reserved matter with regards to its application in Great Britain and Northern Ireland and it will remain so following the end of the transition period. Any future measures will be set following public consultation and with due consideration to the terms of the Northern Ireland Protocol ('NI Protocol').

Products policy has been an effective lever in making energy-related products more energy efficient, thereby reducing their carbon emissions. In 2020 alone, it is estimated that these measures will save 8 $MtCO_2e$ and £100[3] on annual energy bills for the average dual-fuel household in the UK. These savings are important as energy-related products account for approximately 55% of total (non-transport) energy use in the UK with gas boilers, electric motors, lighting and water pumps accounting for a large proportion of this.

Despite the effectiveness of products policy to date in reducing carbon emissions and increasing energy efficiency, some market failures persist. These inhibit the uptake of more energy, and resource, efficient products on a more consistent basis. These market failures include:

Table 1: Market failures inhibiting the uptake of more energy efficient energy-related products

Market failure	Explanation
Accessing finance	The most energy efficient products may have higher purchase costs than less efficient products, even if they are cheaper to run over their lifetime because they use less energy. Consumers and businesses may lack the financial capital to afford these greater upfront costs

[3] BEIS estimates – savings in relation to having no products policy measures

Market failure	Explanation
Misaligned incentives	Individuals or organisations acting on behalf of a consumer, for example those installing equipment or leasing a property, may not always be incentivised to purchase the most energy efficient products
Information failure	Consumers may not always have access to sufficient information to make informed decisions about the energy features of a product at the point of purchase
Bounded rationality	Consumers may not always take the long-term energy and resource savings potential of a product into account when making purchasing decisions
Negative externalities	Prices do not always reflect the total cost of a products' positive or negative environmental impacts, such as its carbon emissions

By addressing these market failures, we can ensure that UK consumers and businesses benefit from greater energy savings, lower energy bills and lower costs. Similarly, by increasing energy and resource efficiency, consumers and businesses can benefit from more durable products that can more easily be recycled, re-used, re-manufactured or repaired.

This Call for Evidence invites views on:

- whether there is scope to set better Ecodesign requirements for products that have already been, or will soon be, regulated at an EU level [section 2.1];
- whether additional products that have not yet been regulated at an EU level could be considered under the UK Ecodesign framework [section 2.2];
- how energy labels can be made more useful for consumers [section 3];
- how UK market surveillance activities can be made more effective in ensuring regulatory compliance [section 4];
- whether additional policy levers could be considered to increase the energy, carbon and resource efficiency potential of energy-related products [section 5]

2. Raising ambition for UK Ecodesign

The EU Ecodesign[4] framework sets minimum energy performance standards for energy-related products. Minimum energy performance standards mandate the energy efficiency requirements of a product within certain timeframes and have the effect of pushing the least efficient products off the market. Over time, this raises the average energy efficiency of all products in a product category.

Ecodesign regulations can also be used to set requirements relating to aspects of a product's resource efficiency, at any point in the product lifecycle from production to end-of-life. These include material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery. These may be regarded as the principles of product design for a circular economy and they can help to reduce the carbon footprint and natural capital impact of products whilst improving resource security and offering jobs and growth in the repair and re-manufacture sectors.

Currently, there are 27 product categories covered by EU Ecodesign regulations, see Table 2 and Annex A for a list of associated regulations.

Table 2: Energy-related product categories covered by existing EU Ecodesign measures

Air conditioners	Circulators
Domestic ovens, hobs and range hoods	Computer and computer servers
Electrical lamps and luminaires	Electric motors
Household dishwashers	External power supplies
Household refrigerating appliances	Refrigerating appliances with a direct sales function
Household washing machines	Vacuum cleaners
Fans driven by motors with an electric input power between 125 W and 500 kW	Standby and off mode electric power consumption of electrical and electronic household and office equipment
Electronic displays and televisions	Water pumps
Residential ventilation units	Welding equipment
Solid fuel boilers	Local space heaters
Space heaters	Household tumble dryers
Professional refrigerated storage cabinets	Small, medium and large power transformers
Water heaters	Simple set-top boxes
Air heating products, cooling products, high temperature process chillers and fan coil units	

In 2018 and 2019, new Ecodesign and Energy Labelling measures were agreed at an EU level for several product categories and we intend to implement these in the UK subject to consultation. These product-specific requirements are either for new products such as welding equipment and commercial refrigeration or in most cases an update to existing regulations such as for lighting products.

[4] Ecodesign 2009/125/EC

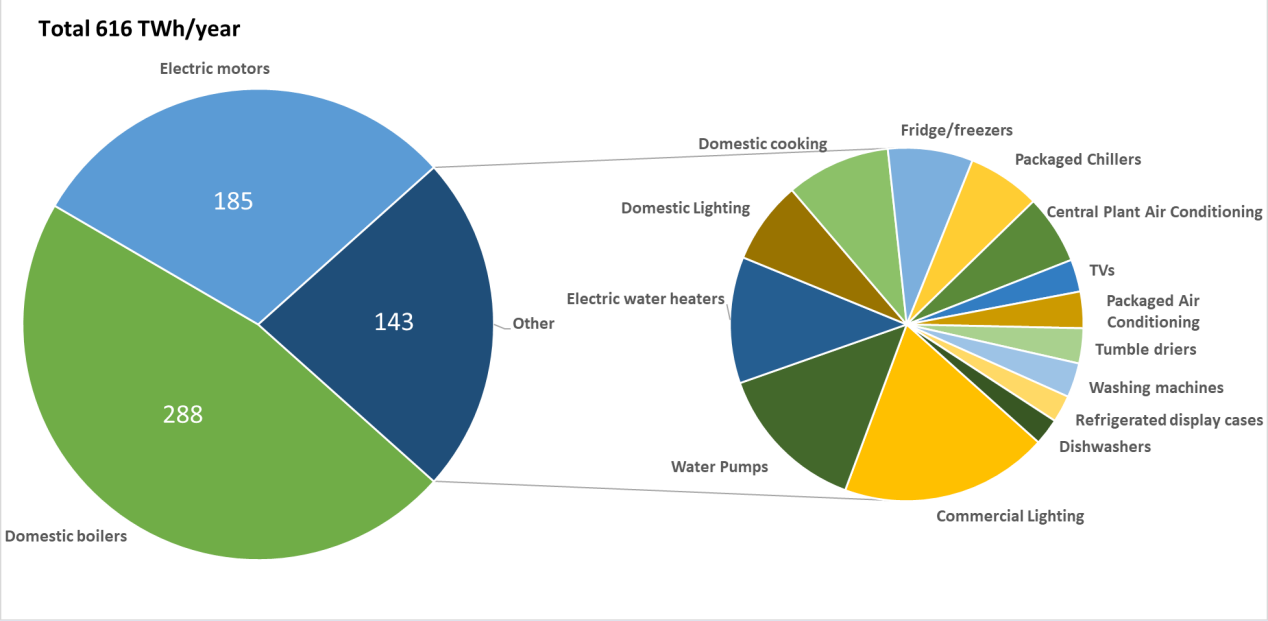
Previously, the UK consistently sought to work with other Member States and the European Commission to raise minimum energy performance standards. Now that the UK has left the EU, the Government intends to uphold these high standards, or even exceed them where it is in the UK's interest to do so[5].

Any future product-specific Ecodesign regulations in the UK would be implemented after a public consultation. A range of factors, in addition to energy efficiency measures, would also be considered. These include but are not limited to the following:

- the product represents a significant volume of sales and trade;
- the product has a significant environmental impact considering quantities placed on the market and/or put into service;
- the product has the potential for cost-effective environmental improvements;
- the product has not been previously regulated;
- the existence of a market failure or market failures;
- there is a disparity in performance amongst products available on the market

A range of products which have the potential for additional energy and carbon savings through better minimum energy performance standards have been highlighted below in Figure 1.

Figure 1: Pie chart showing the energy consumption in TWh of energy-related products in the domestic, non-domestic and commercial sectors in 2018, divided by product category. Energy consumption is for all fuel types[6]



[5] Clean Growth Strategy (2017), p.44, https://www.gov.uk/government/publications/clean-growth-strategy
[6] BEIS estimates on data from: (1) 'Saving Energy Through Better Products and Appliances', 2011 – using policy estimates from 2020; (2) 'Energy Consumption in the UK', 2018

2.1 Better regulation for existing Ecodesign measures

To support the UK's transition to a net zero carbon economy by 2050, it is important to explore ways to maximise the energy and resource savings potential of as many products as possible.

We have undertaken some preliminary research which suggests that the product categories listed below could yield greater energy, resource and carbon savings if better minimum energy performance standards were applied than those which are currently in place or shortly due to be implemented:

- Cooking appliances
- Lighting
- Water pumps
- Boilers
- Heat pumps
- Electric motors
- Space cooling
- Ventilation

This Call for Evidence invites stakeholder views on the feasibility and potential impact of creating better Ecodesign minimum energy performance standards for these products with regards to energy and resource efficiency, and bills savings.

This Call for Evidence is seeking stakeholder views on a wide range of products and we understand that not all products will be relevant to your specific interests. It is, therefore, not necessary to provide views for all the product categories and we would invite you to respond to the product sections which are of relevance to you and/or where you can provide relevant evidence.

In terms of timelines, the UK may start to re-evaluate these Ecodesign measures from 2021, after the end of the transition period, with a view to implementing better regulations from 2024/2025 in order to meet environmental targets.

1. **Apart from the products listed in Table 2 and in sections 2.1.1 – 2.1.8, are there other energy-related products that could save additional energy and resources through better minimum energy performance standards and/or resource efficiency requirements? Please provide evidence and/or data.**

2.1.1 Cooking appliances

Free-standing and built-in cooking appliances cover three main product types: ovens, hobs and grills. They commonly, although not exclusively, use electricity or gas as their primary fuel type. The UK stock of domestic ovens and hobs is approximately 28 million, with approximately 5 million cookers (appliances consisting of both an oven and a hob) sold each year[7].

UK manufacturers supply almost 66% of the demand for non-electric cooking appliances but less than 40% of the demand for electric cooking appliances[8]. In Europe, UK manufacturers are leaders in the production of traditional farmhouse-style range cookers and multiple oven cookers which have up to five ovens.

The UK market is currently dominated by A++ -rated ovens with the majority of A+, and higher-rated, appliances sold in the UK being imported. The average energy rating of UK-manufactured ovens is A. In total, cooking accounts for approximately 2% of greenhouse gas emissions in the UK[9].

EU regulations are already in place to improve the efficiency of domestic ovens, hobs and range hoods[10]. These regulations also include energy-use limits for standby and off-mode power consumption for microwaves, toasters and fryers. BEIS estimates that these Ecodesign requirements will save an estimated 0.18 $MtCO_2e$ between 2025-2030. These savings should be considered alongside the estimated carbon emissions from domestic ovens and hobs, which was approximately 2.1 $MtCO_2e$ in 2019 alone[11].

Ovens have been shown to be among the least energy efficient appliances, with efficiency levels between 10-12%[12]. BEIS analysis indicates that raising minimum energy performance standards for ovens by one energy class, for example from A to A+, could save up to 0.03 $MtCO_2e$ per year.

Improvements to technology, such as the introduction of induction hobs, could make switching to energy efficient hobs more viable. Gas-fuelled ovens and hobs represent approximately 60% of emissions from hobs and ovens in the domestic sector. If these appliances were replaced by electric ones, significant energy and carbon savings could be achieved.

The European Commission is due to review the existing Ecodesign regulations for cooking appliances by February 2021. This review may evaluate existing minimum energy performance standards as well as the feasibility of introducing resource efficiency requirements. The review may also look at expanding the scope of the regulations to include professional and commercial cooking appliances. The UK will consider whether to implement similar, revised requirements, or opt for bespoke, better regulations.

[7] BEIS analysis, 2019 data
[8] HMRC, 2019 data
[9] 'Clean Growth: transforming heating – overview of current evidence', December 2018, https://www.gov.uk/government/publications/heat-decarbonisation-overview-of-current-evidence-base
[10] Ecodesign (EU) 66/2014 and Ecodesign (EC) 1275/2008
[11] BEIS analysis, 2019 data
[12] Amienyo et. al., 'Sustainable manufacturing of consumer appliances: Reducing life cycle environmental impacts and costs of domestic ovens', April 2016

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved for cooking appliances in the UK. Please provide and reference evidence to support your responses.

2. **Could better minimum energy performance standards, than those which currently apply, be set for cooking appliances to save more energy in the UK and facilitate a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

3. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for cooking appliances in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

4. **To what extent are energy efficient products and practices taken up in the catering sector?**

2.1.2 Lighting

In the UK, lighting accounts for approximately 26%[13] of electricity use in the non-domestic sector and 13%[14] in the domestic sector. Global innovation in lighting technology in recent years has made it possible to achieve greater energy savings which, in turn, can reduce the overall amount of electricity required for lighting.

Whilst a large proportion of lighting products in the UK are imported, there is a significant national manufacturing base focused mainly on the assembly of luminaires and lighting system design. Preliminary research suggests that the UK lighting industry has a strong competitive edge in the fields of innovation, design, human-centric lighting and smart lighting.

Revised EU requirements for lighting (for light sources and separate control gears) were agreed at the end of 2018 and are due to take effect from September 2021, with the phaseout of T8 linear fluorescent lamps taking effect from September 2023.

Although the UK voted in favour of these requirements, they will not apply automatically in the UK after the end of the transition period on 31 December 2020. We therefore plan to undertake our own Consultation on revised UK Ecodesign (and Energy Labelling) requirements for lighting.

The new EU Ecodesign regulation[15] covers a wide range of light sources, such as directional and non-directional lighting and street lighting. These changes are forecast to save approximately 2 $MtCO_2e$ in total in the UK between 2028-2032.

Over the same period, however, the carbon emissions for lighting are estimated to be 9 $MtCO_2e$ from domestic lighting; 17 $MtCO_2e$ from commercial lighting; and 1 $MtCO_2e$ from street lighting[16]. This analysis suggests that there are opportunities to save more energy, and therefore carbon, by introducing better minimum energy performance standards for lighting in the UK.

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved for lighting products in the UK. Please provide and reference evidence to support your responses.

5. Could better minimum energy performance standards, than those due to take effect from September 2021 in the EU, be set for lighting products to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

[13] Building Energy Efficiency Survey, 2016
[14] Energy Consumption in the UK, 2019
[15] Ecodesign (EU) 2019/2020
[16] BEIS estimates on data from: (1) 'Saving Energy Through Better Products and Appliances', 2011 – using policy estimates from 2020; (2) 'Energy Consumption in the UK', 2018, - using policy estimates from 2017 and internal modelling up to 2020. Data by product will be of varying accuracy due to the length of the projected energy usage

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

6. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for lighting products in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

7. **Which lighting-related service businesses exist in the UK? Please provide data on service types, volume and any other relevant market information where possible.**

2.1.3 Water pumps

Water pumps are the hydraulic part of a product that moves fluid by physical or mechanical action. They are used for a range of functions including sewage, agriculture and petrochemical pumping amongst others. The water pumps market is worth approximately £1.4 billion in the UK at present. There is also a large service sector associated with water pumps which contributes approximately 57% of the total revenue generated in the water pumps market.

In terms of energy use, forecasts suggest that all types of water pumps use approximately 20 TWh of energy per year and have been responsible for approximately 10 $MtCO_2e$ of carbon emissions per year to date.

Existing EU Ecodesign[17] regulations focus on centrifugal water pumps. A centrifugal water pump is a device that imparts kinetic energy into water by means of a rotating impeller, causing the water to move.

Water pumps regulations are currently administered at a product level, which means that requirements focus exclusively on the mechanical action of the pump. We believe that, in future, water pumps may be regulated under the Extended Product Approach ('EPA'), which will consider systems-level regulations. These regulations will consider all of the component parts of a water pump as a single unit (including the driving motor and/or gearbox), as opposed to standalone items requiring bespoke regulatory measures. This could result in greater energy savings being achieved.

The European Commission is currently considering a new revised Ecodesign regulation for water pumps, which may look to include Booster Sets and Multistage Horizontal Pumps within scope and set more ambitious minimum energy performance standards through the extended product approach for some types of pumps. Apart from information requirements on disassembly, recycling or disposal at end of life, the draft proposal does not currently include requirements on resource efficiency which may be considered as part of a future regulation.

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved sooner for water pumps in the UK. Please provide and reference evidence to support your responses.

8. **Could better minimum energy performance standards, than those which currently apply, be set for water pumps to save more energy in the UK and enable a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**

[17] Ecodesign (EU) 547/2012

- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

9. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for water pumps in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

10. **Does the UK provide any water pumps services (including research & development, repair and/or design etc.)?**

11. **Is there scope for introducing systems-level Ecodesign regulations for water pumps in the UK? Please provide evidence and/or data.**

2.1.4 Boilers

Boilers are devices that heat water, which is then used in various processes, including space heating, water heating, cooking and sanitation. Most boilers in UK buildings do this through the combustion of fossil fuels, namely natural gas, coal, oil or liquefied petroleum gas (LPG).

The UK is the largest European market for boilers, with approximately 1.7 million boiler replacements occurring every year. There are also several large manufacturers based in the UK which have closely integrated supply chains with Europe.

According to the Committee on Climate Change ('CCC'), there are 23 million homes connected to the gas grid which account for around 77% of total UK heating emissions, which equates to approximately 57 $MtCO_2e$ per year. In the domestic sector alone, heating and hot water use account for 11% of total carbon emissions. Heating in off-gas domestic properties accounts for approximately 17 $MtCO_2e$ in carbon emissions annually[18]. Therefore, the potential energy and carbon savings potential for boilers are significant.

Achieving our net zero target by 2050 means that we will need to fully decarbonise how we heat our homes. As we prepare for net zero, there will need to be a drive towards a more widespread uptake of low-carbon technologies (see Box 1), which could include heat pumps, hybrid systems and boilers that run on zero-carbon fuels.

There is good evidence that the efficiency of boilers in-use is lower than when tested under controlled conditions[19]. One of the reasons for this is that boilers may be incorrectly sized, which leads to frequent on-off cycling. Cycling of boilers is generally detrimental to the overall efficiency of the heating system[20]. Modulating boilers are expected to meet the heat demand of a building as it changes through the day and seasons. The maximum output of a boiler and the modulation range play key roles in determining whether the boiler can match the space heating demand without cycling and decreasing efficiency. Combination boiler installations, due to their sizing based on domestic hot water heat demand, tend to be unable to meet the space heating demand without significant cycling. This is expected to decrease the efficiency and lifetime of the boiler, resulting in extra costs being incurred by the consumer.

Minimum energy performance standards offer one way of reducing emissions from heating as they could help move the market for fossil fuel boilers towards lower carbon alternatives, or both, whilst ensuring appropriate exemptions for certain applications. Standards based on minimum system/fuel efficiency or maximum carbon emissions, which could be tightened over time to yield better results, have been put forward as potential elements of a future policy mix for low-carbon heating.

At the same time, it could also be possible to phase out the sale of high carbon boilers from the market, such as oil boilers, subject to appropriate exemptions. We will be consulting later this year on policy options to deliver the Clean Growth Strategy commitment to phase out the installation of high-carbon fossil fuel boilers in off-gas grid buildings in the 2020s.

[18] Committee on Climate Change, 'Heat in UK Buildings Today', 2016, https://www.theccc.org.uk/publications/next-steps-for-uk-heat-policy/
[19] Energy Saving Trust, 'In-situ monitoring of efficiencies of condensing boilers', 2009
[20] Bennett et. al., 'Space Heating Operation of Combination Boilers in the UK', Building Services Engineering Research & Technology 40.1, 2019, pp75-92, https://journals.sagepub.com/doi/abs/10.1177/0143624418794552

Box 1: Low-carbon heating systems

There are a number of different low-carbon heating technologies which are at varying stages of development and market deployment.

Heat pumps [discussed further in section 2.1.5]

Heat pumps are devices that transfer heat from a source, such as air, ground or water, to where it is needed, for example space heating or domestic hot water. Heat pumps have the potential to significantly reduce carbon emissions from the heating sector because they draw energy from the environment around them. They can therefore be more than 250% efficient per unit of electricity used versus conventional heating products like combination boilers.

'Hybrid' heating systems

'Hybrid' heating systems include both a combustion boiler and an electric heat pump, or other renewable energy technology. Whilst a range of different systems and models have been developed, typically, the boiler part provides high temperature heat for hot water whilst the heat pump, or other renewable energy technology, is designed to service lower temperature space heating requirements.

The market for these types of 'hybrid' systems is slightly more mature in Europe than the nascent UK market for a number of factors. These include higher upfront costs than for standard combination boilers and the relative cost of gas compared to electricity. Generally, 'hybrid' heating systems can be configured to cover any ratio of energy sources.

Hybrid heat pumps, for example, are systems which include both a conventional boiler and a heat pump, with a control system that optimises how the two technologies interact and interoperate. High efficiency boilers are boilers with small heat pumps integrated within them. Finally, boilers integrated with low-carbon heating systems are conventional boilers that work in tandem with low-carbon technologies, such as solar thermal technologies, to achieve modest improvements in the system's overall efficiency (e.g. increasing it to 105% efficient)

Zero-carbon fuels

There are already alternatives to natural gas being used. These 'low-carbon' gases, such as biomethane, can help reduce carbon emissions.

Low-carbon hydrogen in the gas network could be one way of reducing the carbon emissions from heating. Some manufacturers have already begun to produce 'hydrogen-ready' boilers which are compatible with both natural gas and hydrogen. However, further research is required to prove that such technologies are safe and feasible before their effect on the transition to net zero can be gauged. Key questions include the suitability of the gas grid for carrying hydrogen and the potential to produce sufficient low-carbon hydrogen at scale.

The UK's Boiler Plus regulation, which mandates that all new boilers installed must have a minimum efficiency of 92%, is already above minimum EU Ecodesign requirements, which are currently at 86%. Mandatory minimum energy performance standards have been an important tool in driving emissions reductions in heating to date.

Regulations made in 2005 introduced the mandatory switch to condensing boilers. This has widely been credited as one of the key factors that drove down the cost of these types of boilers as the measures were supported by enabling action; in this case, a targeted training programme for installers. Despite this, there are still some challenges in using product standards to bring low-carbon heating technologies to market, such as using a common metric to define minimum efficiency levels for heating systems operating on different fuel types.

Subject to a reduction in their costs, the CCC believes a transition to 'hybrid' heating systems in the 2020s could be an important step towards reducing the carbon emissions from heating, particularly in properties that are already connected to the gas grid. Such systems could also offer greater levels of demand side flexibility, which when paired with smart tariffs and demand response services, could result in lower running costs for consumers and reduced system impacts overall.

BEIS is currently undertaking a large-scale 'Electrification of Heat Demonstration Project' which will include 'hybrid' systems. It aims to gather further evidence on how these systems operate in practice, which will provide more in-depth understanding of the role of 'hybrid' systems in decarbonising heating going forwards.

This Call for Evidence invites views on how to maximise the energy savings potential of boilers and alternative heating systems. Please provide and reference evidence to support your responses.

12. For the different heating systems discussed, what are the potential benefits, technical barriers, costs and impacts on UK businesses and consumers? Please provide evidence and/or data.

13. Could tighter minimum energy efficiency levels above the existing 92% (for example 120%, 130%, 140% etc.) help bring to market low-carbon heating technologies?

>IF YES, what exemptions may be required for certain applications? Please provide evidence and/or data.

>IF NO, why not? Please provide evidence and/or data.

14. To what extent could raising the minimum energy efficiency of boilers drive improvements in emissions savings in heating and enable a transition towards net zero?

15. What role do you think minimum energy performance standards should play in driving a transition to zero-carbon heat? Are there alternatives, or complementary measures, that might work better?

16. What regulatory product standard changes could be put in place to reduce cycling and improve the performance of boiler installations?

17. Would wider modulation boilers address the performance issues in combination boilers?

2.1.5 Heat pumps

Heat pumps are devices that transfer heat from a source, such as air, ground or water, to where it is needed, for example space heating or domestic hot water. There are approximately 220,000 heat pumps, excluding air-to-air systems, installed in the UK at present.

Heat pumps have the potential to significantly reduce carbon emissions from the heating sector because they draw energy from the environment around them and can therefore be more than 250% efficient per unit of electricity used versus conventional heating products like combination boilers. With the energy grid becoming increasingly decarbonised, they offer the prospect of very low carbon heating in domestic and commercial buildings.

By 2050, in order to meet net zero targets, almost all heat in buildings will need to be decarbonised and this is likely to require a significant deployment of heat pumps or equivalent low-carbon technologies.

In their 'core scenario' for achieving net zero, the CCC estimate that 17 million heat pumps will need to be installed by 2050 whilst in their 'further ambition' scenario, this increases to 19 million[21]. Deploying the 'further ambition' options for heating buildings would save 83 $MtCO_2e$ in total, leaving residual carbon emissions of up to 4 $MtCO_2e$ in 2050. The CCC suggests this would require an ambitious roll-out of technologies such as heat pumps, hybrid heat pumps and district heating in conjunction with hydrogen and new smart storage heating, further combined with high levels of energy efficiency. The CCC also suggests that new homes should not be connected to the gas grid from 2025, and by 2035, almost all replacement heating systems for existing homes must be low-carbon or hydrogen-ready. This would increase the overall proportion of low-carbon heating from 4.5% today to 90% in 2050. These changes could be made at an average of approximately £140/tCO_2e.

Product efficiency and demand on the electricity grid are likely to be important considerations for the increased uptake of heat pumps going forwards. The Government's Energy Innovation Needs Assessment on Heating and Cooling[22] report suggests that there is significant potential to improve the design of heat pumps and drive better integration with smart systems; thereby increasing their performance and reducing their running costs.

Heat pumps are currently regulated under EU Ecodesign[23] regulations. BEIS analysis suggests that better minimum energy performance standards for heat pumps could reduce the total cost of transitioning to net zero by 2050, under a high heat pump deployment scenario.

Therefore, regulating the energy efficiency of heat pumps will become increasingly important, as the rate of deployment rises, in order to mitigate their impact on energy bills and the energy grid.

Given the additional electricity loads and potential spikes in demand, we also need to consider whether heat pumps sold in the UK should be demand-side response enabled, as this would allow the energy system to manage this increased demand in an intelligent way to maximise efficiency.

[21] Committee on Climate Change, 'Net Zero – The UK;s contribution to stopping global warming', May 2019
[22] 'Energy Information Needs Assessment', October 2019, https://www.gov.uk/government/publications/energy-innovation-needs-assessments
[23] Ecodesign (EU) 813/2013

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved for heat pumps in the UK. Please provide and reference evidence to support your responses.

18. **Could better minimum energy performance standards, than those which currently apply, be set for heat pumps to save more energy in the UK and enable a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

19. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for heat pumps in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

20. Could better measures be delivered under Ecodesign regulations to improve product design, such as better integration with smart systems?

>IF YES, in what timeframe could these requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

21. Should different product standards apply to higher temperature heat pumps which may be required for hard-to-treat homes?

2.1.6 Electric motors

Electric motors convert electrical energy into mechanical energy. Approximately 6 million electric motors are sold in the UK annually, with approximately five times more being imported into the UK than exported in 2018. The traded value of total imports and exports was approximately £63 million and £72 million respectively.

Electric motors are currently regulated at an EU level[24] with the most recent regulations agreed in 2018/2019[25]. Greenhouse gas emissions savings from these regulations over the Carbon Budget 5 period, 2028-2032, are estimated to be 2,700 GWh which equates to 0.2 $MtCO_2e$.

BEIS estimates suggest that by 2050, an additional 21,000 GWh, and 1.5 $MtCO_2e$, could be saved from better regulations over the same time period. This represents the second largest saving of all energy-related products analysed by BEIS and accounts for approximately one-third of all potential savings, excluding boilers.

Electric motors are distinguished by their efficiency rating, or 'IE' number, where IE0 is the least efficient motor and IE4 is the most efficient technology currently available. The implementation of better Ecodesign requirements, than those which currently exist at an EU level, such as introducing a requirement for IE4 electric motors to be sold for all motor sizes, could generate notable energy savings in the UK.

Although the UK recently voted in favour of new EU requirements for electric motors, they will not apply automatically in the UK after the end of the transition period on 31 December 2020. We therefore plan to undertake our own Consultation on revised UK Ecodesign (and Energy Labelling) requirements for electric motors before the end of the transition period.

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved for electric motors in the UK. Please provide and reference evidence to support your responses.

22. Could better minimum energy performance standards, than those due to take effect from July 2021 in the EU, be set for electric motors to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**

[24] Ecodesign (EU) 640/2009
[25] Ecodesign (EU) 2019/1781

- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

23. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for electric motors in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

2.1.7 Space cooling

A space cooling product, such as an air conditioner, is a device that controls the humidity, ventilation and temperature in a building, typically to maintain a cool atmosphere in warm conditions. Air conditioners are currently regulated by the EU[26].

In 2015, an estimated 234,000 air conditioners, both portable and fixed, were sold in the UK. This number is expected to rise to 259,000 by 2030. The total stock of air conditioners in the UK is expected to increase from 2.6 million to 2.9 million in the same time period.

The UK does not have a large manufacturing base for air conditioners as nearly all products currently on the market have been imported.

Existing Ecodesign regulations are expected to save approximately 11 TWh and 5 $MtCO_2e$ annually by 2020. By introducing better regulations for air conditioners, more electricity could be saved, and consumers could save money on their energy bills.

However, as the installation of air conditioners increases, this would have the effect of increasing electricity demand during the summer months, which, in turn, could create challenges and increase pressure on the energy grid. Therefore, regulating the energy use of air conditioners will become increasingly important in order to counteract this.

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved for space cooling products in the UK. Please provide and reference evidence to support your responses.

24. Could better minimum energy performance standards, than those which currently apply, be set for space cooling products to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

[26] Ecodesign (EU) 206/2012

25. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for space cooling products in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

2.1.8 Ventilation

Ventilation units are products that exchange or replace air in a space to improve air quality, typically, by managing temperature, oxygen replenishment and the removal of moisture, odours, smoke, heat, dust, airborne bacteria, carbon dioxide and other gases.

Ventilation units are regulated under ecodesign[27], however as the energy savings capacity of homes is increased through insulation, the significance of air tightness and adequately controlled ventilation will also increase. There are already a range of ventilation technologies that control airflow efficiently and, in some cases, even recover waste heat.

This Call for Evidence invites views on whether greater energy and resource efficiency savings can be achieved for ventilation units in the UK. Please provide and reference evidence to support your responses.

26. Could better minimum energy performance standards, than those which currently apply, be set for ventilation units to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

27. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for ventilation units in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

[27] Ecodesign (EU) 1253/2014

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

2.2 Expanding the scope of the UK Ecodesign and Energy Labelling framework

In addition to the product categories currently regulated under EU Ecodesign, the UK may regulate additional products which have a high energy and resource efficiency savings potential, in accordance with the principles set out in section 2.

This would reflect existing precedence whereby non-EU countries have implemented regulations for products that have not been regulated at an EU level. For example, Ecodesign regulations were introduced in Switzerland for coffee machines given their significance in the Swiss market.

This section explores a range of products that have not yet been regulated at an EU level, but which may be suitable for regulations under the UK Ecodesign framework. Section 2.2.1 looks at the energy, resource and carbon savings potential for taps and showers and section 2.2.2 covers smart appliances in greater detail. Section 2.2.3 looks at heat distribution systems, hot water and heat storage.

This Call for Evidence invites stakeholder views on the feasibility and potential impact of creating Ecodesign minimum energy performance standards for these product categories with regards to energy and/or resource efficiency, and bills savings.

In terms of timelines, the UK may start to evaluate these measures from 2021, after the end of the transition period, with a view to implementing regulations from 2024/2025 in order to meet environmental targets.

2.2.1 Taps and showers

A tap is a valve which controls the release of water and a shower is a system composed of a mixing valve (mechanical or thermostatic), hoses and a water outlet. Configurations of taps and showers can include mechanisms to control temperature, flow rate and mixing.

In order to counteract the potential impacts of water scarcity, the UK National Infrastructure Commission reported that at least 3.3 billion litres of additional capacity will be required per day by 2050[28].

As energy is required to heat water, the efficient use of hot water in taps and showers is becoming increasingly important in terms of energy savings. Preliminary analysis indicates that there is scope to save the energy used in heating water by restricting water flow rates in taps and showers. This would have the effect of reducing both the energy used required to heat water as well as the total volume of water used. The EU's preparatory study[29] on taps and showers indicated significant savings could be achieved through a mandatory label which would correspond to potential savings in the UK of up to 2 $MtCO_2e$ by 2030, and 4 $MtCO_2e$ by 2050[30].

Defra's Consultation on reducing personal water use

In 2019, the Department for Environment, Food & Rural Affairs ('Defra') ran a UK-wide Consultation on the various measures that could be taken to reduce personal water use. Their Consultation looked at how various levers from amending existing building regulations to smart metering could best be deployed to achieve this. For further information on this Consultation, please visit the Defra website[31].

The evidence being sought in this Call for Evidence falls out of scope of Defra's work. This document focuses on the energy savings that can be achieved through new product-based regulations for taps and showers.

This Call for Evidence invites views on how greater energy and resource efficiency savings can be achieved for taps and showers in the UK. Please provide and reference evidence to support your responses.

28. What is the size of UK manufacturing for taps, shower valves and shower heads in the domestic and non-domestic sectors? Please provide evidence and/or data for each of these product categories separately (e.g. stock, annual sales, rate of replacement, water flow rate, annual water consumption, annual primary energy demand etc.)

[28] NIC Commission, 'Preparing for a drier future: England's water infrastructure needs', April 2018, https://www.nic.org.uk/publications/preparing-for-a-drier-future-englands-water-infrastructure-needs/
[29] ErP Preparatory Study for Taps and Showers, May 2019, https://susproc.jrc.ec.europa.eu/taps_and_showers/stakeholders.html
[30] BEIS estimates – based on EU analysis converted to UK equivalence using UK population as a proportion of EU population as the scaling factor
[31] Defra Consultation: 'Water Conservation: measures to reduce personal water use', 2019, https://www.gov.uk/government/consultations/water-conservation-measures-to-reduce-personal-water-use

29. Are there any existing measures in place which encourage energy and water savings in these products?

>IF YES, how can they be made more effective? Please provide evidence and/or data.

>IF NO, should some be introduced (e.g. restriction of flow rates, mandatory or voluntary labelling)? Please provide evidence and/or data.

30. What more could be done to enhance the resource efficiency (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) of taps, shower valves and shower heads in the UK? Please provide evidence and/or data for each of these product categories separately

31. Based on existing technologies, what is the maximum amount of energy and water that could be saved from taps and showers in the following timeframes after 1 January 2021? Please provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

2.2.2 Smart appliances

Smart appliances are appliances that can alter their electricity consumption by means of a remote signal. This can help reduce energy use, and therefore carbon emissions, by operating when the energy intensity of the grid is low. Smart appliances are, therefore, important in helping to integrate intermittent generation into the future electricity network and, as heating and transport is electrified, help to overcome grid capacity problems at peak periods. These technologies are frequently referred to as 'Demand Side Response' ('DSR').

The European Commission have begun some preparatory studies[32] to investigate how smart appliances could be brought into Ecodesign regulations. Thus far, this work has demonstrated that considerable energy and carbon savings could be achieved by specifying smart functionalities in Ecodesign regulations. However, it has also indicated that smart standards in this area need further development before any such regulations can be formulated.

In parallel, the UK Government has consulted[33] on a series of proposals for smart appliances with the responses indicating broad support for government to take powers to allow for the regulation of smart appliances, with an initial scope including cold and wet appliances, heating, ventilation, air conditioning and battery storage. There are already powers in place to regulate electric vehicle charge points.

Since then, the Government has asked the British Standards Institution (BSI) to report on the standards gaps that need to be filled in order to regulate smart appliances[34] and is now working with the BSI to develop two Publicly Available Specifications[35] that will fill these gaps, whilst also taking the European Commission's[36] existing work into full consideration. The UK has also established a world-leading industry in companies that can utilise smart-enabled DSR to offer flexibility of demand to grid operators and, in turn, National Grid ESO have developed world-leading DSR services to balance intermittent generation[37].

It is likely that UK industry could take a lead in developing regulations in this area which could create significant positive economic and environmental impacts. This Call for Evidence invites views on what benefits could be available to the UK in setting better regulations, more quickly, than the EU in this area, provided suitable enabling technical standards are available.

This Call for Evidence invites views on the potential environmental and economic benefits of smart appliances in the UK. Please provide and reference evidence to support your responses.

32. What quantifiable environmental benefits do you see as being potentially available if the UK became international leaders on the regulation of smart appliances?

[32] https://eco-smartappliances.eu/en
[33] BEIS Consultation: 'Proposals regarding setting standards for smart appliances', 2018, https://www.gov.uk/government/consultations/proposals-regarding-setting-standards-for-smart-appliances
[34] https://www.bsigroup.com/en-GB/smart-appliances-flexible-energy/smart-appliances-form/
[35] https://www.bsigroup.com/en-GB/smart-appliances-flexible-energy/
[36] https://ec.europa.eu/digital-single-market/en/blog/new-standard-smart-appliances-smart-home
[37] https://www.nationalgrideso.com/balancing-services/demand-side-response-dsr

33. Are there any technical barriers in achieving these benefits? Please provide evidence and/or data.

34. Would leading in the regulation of smart appliances allow the UK to develop economic benefits from DSR?

>IF YES, would these economic benefits be exploitable in an export market? Please provide evidence and/or data.

>IF NO, why not? Please provide evidence and/or data.

2.2.3 Heat distribution systems, hot water and heat storage

Heat emitters, such as radiators, are used by heating systems to create warm conditions in spaces. Most radiators fitted in domestic premises are designed to operate at high temperatures of around 70°C. Low-carbon heating systems, such as heat pumps, run at lower temperatures, typically up to 55°C, although they can operate more efficiently at even lower temperatures around 35°C. Running at lower temperatures is beneficial because it is less energy intensive.

Households can save energy by either reducing the heat loss of their home through improvements to insulation and draught proofing; increasing the size of their radiators; turning their thermostats down; or switching to another emitter type, such as under floor heating or fan-assisted radiators.

At present, EU Ecodesign or Energy Labelling regulations do not cover heat emitters. BEIS is currently undertaking research to improve the evidence base of the current state of heat distribution systems in homes. This process will include carrying out in-home surveys to establish the current size and capacity of distribution systems which will enable the Department to make more accurate estimates of the costs of moving to low-carbon heating systems. This research will also review potential performance enhancing measures that could be applied to existing heat distribution systems.

Minimum energy performance standards are currently set under Ecodesign regulations[38] for hot water storage. However, minimum energy performance standards could be introduced for broader heat storage technologies as these are likely to become a potentially vital enabler for the widespread adoption of low-carbon heating in the future. These technologies also provide flexibility and allow for increased DSR within the wider energy system.

This Call for Evidence invites views on how greater energy and resource efficiency savings can be achieved for heat emitters, hot water and heat storage products in the UK. Please provide and reference evidence to support your responses.

35. Do heat emitters, hot water and heat storage products have a high energy savings potential, either directly or as an enabler for the adoption of lower-temperature heating, in the following timeframes after 1 January 2021? Please provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

[38] Ecodesign (EU) 814/2013

3. Making energy labels more useful for consumers

Energy labels provide information to consumers on the energy performance rating of an energy-related product, such as a washing machine, dishwasher or television. They are intended to support informed purchasing decisions; promote competition amongst manufacturers to develop more energy efficient products; reduce energy use and consumer bills; and ultimately reduce carbon emissions by encouraging the uptake of the most energy efficient products that are currently available on the market at any given time.

Currently, there are 16 product categories covered by EU Energy Labelling requirements see Table 3 and Annex A for a list of associated regulations.

Table 3: Energy-related product categories covered by existing EU Energy Labelling measures

Air conditioners	Electrical lamps and luminaires
Domestic ovens and range hoods	Residential ventilation units
Professional refrigerated storage cabinets	Refrigerating appliances with a direct sales function
Household dishwashers	Space heaters
Household washing machines	Electronic displays and televisions
Household tumble dryers	Water heaters, hot water storage tanks
Household refrigerating appliances	Household combination washer-dryers
Local space heaters	Solid fuel boilers

Any future Energy Labelling regulations in the UK would be implemented after public Consultation. A range of factors would be considered for any such requirements, including, but not limited to, the following:

- facilitating informed consumer decision-making at the point of purchase;
- reducing energy demand;
- saving customers money on their energy bills;
- supporting innovation and investment in energy efficiency measures;

36. Apart from the products listed in Table 3, are there other energy-related products that could be subject to energy labelling requirements to help increase the uptake of the most energy and resource efficient products? Please provide evidence and/or data.

3.1 Improving the UK energy label

Currently, the UK's energy labels are created under terms of the EU Energy Labelling[39] framework regulation. After the end of the transition period on 31 December 2020, the UK may be able to create bespoke energy labels to make them more relevant for UK consumers and businesses.

Many studies have been conducted into energy labels and how they might be designed and engineered in such a way as to drive the uptake of the most energy efficient products currently available at any given time. Conclusions from these studies point towards the use of lettered scales, such as the A-G scale, instead of numerical scales[40]; the inclusion of the total cost of energy to run the product over its lifetime[41]; and improving consumer understanding of the energy label through public communications campaigns[42].

There is also evidence which suggests that consumers may be willing to pay higher upfront costs for a product when its lifetime energy costs are displayed on an energy label at the point of purchase. The rationale that sits behind this is that premium products have more energy efficiency design features built into them which could save consumers money on their energy bills in the long-term.

Changes to energy labels in the UK could include presenting additional information on a products' energy and resource efficiency metrics to influence consumer purchasing decisions. Such information could relate to the cost of running a product, its smart functionality, repairability, re-usability, recyclability and durability.

Technological solutions could also be explored to support similar improvements. Opportunities include adding QR codes onto energy labels, as will be introduced on new EU energy labels from 1 March 2021 for relevant products. This information would allow consumers to access important information relating to a products' energy and resource efficiency properties in a quick and easy way.

This Call for Evidence invites views on how to improve the energy label in the UK.

37. Are existing energy labels effective in encouraging the purchase of the most energy efficient products? Please choose one of the below and provide further evidence and/or data:

- **Very**
- **Somewhat**

[39] (EU) 2017/1369, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2017.198.01.0001.01.ENG

[40] London Economics, 'Study on the impact of the energy label – and potential changes to it – on consumer understanding and on purchase decisions', October 2014, https://ec.europa.eu/energy/en/studies/study-impact-energy-label-%E2%80%93-and-potential-changes-it-%E2%80%93-consumer-understanding-and-purchase

[41] S.L. Heinzle, 'Disclosure of Energy Operating Cost Information', Journal of Consumer Policy, 2012, https://link.springer.com/article/10.1007%2Fs10603-012-9189-6

[42] P. Waide et. al., 'The new energy label', 2013, https://www.eceee.org/library/conference-_proceedings/eceee_Summer_Studies/2013/6-appliances-product-policy-and-ict/the-new-energy-label-assessing-consumer-comprehesion-and-effectiveness-as-a-market-transformation-tool/

- **Not very**

38. Can energy labels be used to promote more energy efficient in-use practices by consumers? Please provide evidence and/or data.

39. What impact would expanding the scope of energy labels, to include information about resource efficiency, have on consumer purchasing decisions? Please provide evidence and/or data.

40. How can energy labels be made more useful for UK consumers (e.g. by including a product's average lifetime energy costs, by using more/less text or imagery etc.)? Please provide evidence and/or data.

4. Strengthening UK market surveillance

In the UK, Ecodesign and Energy Labelling measures are enforced by market surveillance authorities ('MSAs'), as detailed in Table 4.

Table 4: UK market surveillance authorities in Great Britain and Northern Ireland

Regulation	Great Britain MSA	Northern Ireland MSA
Ecodesign	Office for Product Safety & Standards	Office for Product Safety & Standards
Energy Labelling	Office for Product Safety & Standards and Trading Standards	Office for Product Safety & Standards and the Department for the Economy (NI)

The purpose of market surveillance is to ensure that energy-related products placed on the UK market or put into service comply with relevant legislation for health, safety, environmental or any other factor in the public interest. Market surveillance activities are also intended to protect compliant businesses from unfair or unscrupulous business practices.

A range of methods are used by the Office for Product Safety & Standards ('OPSS') to carry out control and enforcement activities. These include requesting technical documentation (product fiches) from manufacturers; conducting preliminary product testing; full product verification; and engaging with stakeholders. This allows OPSS to understand end-to-end manufacturing processes and assess risks in a proportionate manner.

In the event of non-compliance, OPSS can apply a range of sanctions, from removing the product in question from the market to imposing financial penalties, depending on the level and scale of infraction.

Effective market surveillance protects consumers and provides them with confidence in the information they are provided with when making purchasing decisions. It provides industry stakeholders with confidence when trading on the UK market. Robust control and enforcement will also be important in supporting the UK's transition to a carbon neutral economy by 2050.

Now that the UK has left the EU, effective market surveillance is even more important in ensuring that non-compliant goods are not placed on the UK market.

This Call for Evidence invites views on how to improve existing UK market surveillance activities.

41. How effective are existing UK market surveillance activities for Ecodesign and Energy Labelling? Please choose one of the below options and provide evidence and/or data:

- **Very**
- **Somewhat**
- **Not very**

42. How effective are existing UK market surveillance activities for products that are purchased online? Please choose one of the below options and provide evidence and/or data:

- **Very**
- **Somewhat**
- **Not very**

43. How can the process of reporting non-compliant businesses and/or products to UK market surveillance authorities be improved?

44. Would the provision of UK Ecodesign and Energy Labelling regulations and guidance in languages other than English help improve levels of compliance?

>IF YES, which language(s) should be prioritised? Please provide evidence and/or data.

>IF NO, why not? Please provide evidence and/or data.

5. Exploring other policy levers

Policy intervention is an effective tool in correcting market failures and in ensuring that objectives that are in the national interest can be met. For energy-related products, minimum energy performance standards and energy labels have been effective in making products more energy efficient, reducing consumer energy bills, reducing carbon emissions and driving product innovation.

There are also other policy levers which contribute to the uptake of the most energy efficient products in the UK. These include fiscal incentives such as reduced VAT, and procurement tools such as Government Buying Standards.

However, despite the existence of these measures, additional or alternate policy levers could be implemented to further increase the production and sale of even more energy efficient technologies.

BEIS has undertaken some preliminary research to highlight a broad range of policy levers that could be employed in the UK, where they do not already exist, to achieve the key objectives of products policy and better support the UK's transition to a net zero carbon economy by 2050.

Table 5 provides an overview of some of these policy levers, and examples of where they have been successful outside the UK to date.

Table 5: Policy levers to increase the benefits of products policy in the UK[43]

Policy lever	Explanation	Examples
Public procurement	Regulatory criteria for national or local government procurement which creates demand for more energy and resource efficient products	South Korea, Green Public Procurement – regulations for purchasing products based on environmental or social criteria
Obligation schemes	Regulatory mechanism requiring obligated parties to meet quantifiable energy savings targets across their customer portfolio	Denmark, Energy Companies' Efficiency Efforts – these measures cover appliances
Fiscal incentives	Discounts, loans or other measures to reduce the price premium barrier of more energy and resource efficient products	US, Energy Star – this programme provides fiscal incentives for selected high energy efficient products
Communications campaigns	Messaging to produce simple and actionable content that is relevant	US, Community Based Outreach – information on environmental product and services is

[43] BEIS research and analysis

Policy lever	Explanation	Examples
	to consumers and motivates to save energy	disseminated through community networks
Advice in implementation	Specific campaigns disseminating expert knowledge and advice on appropriate tools and technologies	California, US, Home Energy Report – provides consumers with an easy breakdown of their energy usage and tailored recommendations to reduce energy use and social comparison
Award schemes	Awareness raising measures to increase the visibility of manufacturers of energy and resource efficient products to stimulate consumer demand	US, Energy Star Most Efficient programme – awards for manufacturers for producing highly efficient products for the domestic market
Technology deployment and diffusion	Bespoke programmes to demonstrate capability and remove non-technical barriers to adoption, such as fiscal incentives, awareness raising etc.	China, Golden Carrot / Efficiency Awards – awards, training and incentives provided to improve the efficiency of refrigerators and compressors

This Call for Evidence invites views on whether similar policies to those listed in Table 5, or ones that have not been listed, could be implemented in the UK to increase the energy, carbon and resource efficiency potential of energy-related products.

45. Which of the policy levers listed in Table 5 would be the most effective in making energy-related products more energy and resource efficient in the UK?

46. Are there additional policy levers, which have not been listed in Table 5, that could be effective in market energy-related products more energy and resource efficient in the UK?

Call for Evidence questions

Better regulation for existing Ecodesign measures

1. Apart from the products listed in Table 2 and in sections 2.1.1 – 2.1.8, are there other energy-related products that could save additional energy and resources through better minimum energy performance standards and/or resource efficiency requirements? Please provide evidence and/or data.

Cooking appliances

2. **Could better minimum energy performance standards, than those which currently apply, be set for cooking appliances to save more energy in the UK and facilitate a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

3. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for cooking appliances in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**

- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

4. **To what extent are energy efficient products and practices taken up in the catering sector?**

Lighting

5. **Could better minimum energy performance standards, than those due to take effect from September 2021 in the EU, be set for lighting products to save more energy in the UK and enable a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

6. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for lighting products in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

7. **Which lighting-related service businesses exist in the UK? Please provide data on service types, volume and any other relevant market information where possible.**

Water pumps

8. **Could better minimum energy performance standards, than those which currently apply, be set for water pumps to save more energy in the UK and enable a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

9. **Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations water pumps in the UK?**

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

10. **Does the UK provide any water pumps services (including research & development, repair and/or design etc.)?**

11. **Is there scope for introducing systems-level Ecodesign regulations for water pumps in the UK? Please provide evidence and/or data.**

Boilers

12. **For the different heating systems discussed, what are the potential benefits, technical barriers, costs and impacts on UK businesses and consumers? Please provide evidence and/or data.**

13. **Could tighter minimum energy efficiency levels above the existing 92% (for example 120%, 130%, 140% etc.) help bring to market low-carbon heating technologies?**

>IF YES, what exemptions may be required for certain applications? Please provide evidence and/or data.

>IF NO, why not? Please provide evidence and/or data.

14. **To what extent could raising the minimum energy efficiency of boilers drive improvements in emissions savings in heating and enable a transition towards net zero?**

15. **What role do you think minimum energy performance standards should play in driving a transition to zero-carbon heat? Are there alternatives, or complementary measures, that might work better?**

16. **What regulatory product standard changes could be put in place to reduce cycling and improve the performance of boiler installations?**

17. **Would wider modulation boilers address the performance issues in combination boilers?**

Heat pumps

18. **Could better minimum energy performance standards, than those which currently apply, be set for heat pumps to save more energy in the UK and enable a transition towards net zero?**

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**

- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

19. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for heat pumps in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

20. Could better measures be delivered under Ecodesign regulations to improve product design, such as better integration with smart systems?

>IF YES, in what timeframe could these requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

21. Should different product standards apply to higher temperature heat pumps which may be required for hard-to-treat homes?

Electric motors

22. Could better minimum energy performance standards, than those due to take effect from July 2021 in the EU, be set for electric motors to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

23. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for electric motors in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

Space cooling

24. Could better minimum energy performance standards, than those which currently apply, be set for space cooling products to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

25. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for space cooling products in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

Ventilation

26. Could better minimum energy performance standards, than those which currently apply, be set for ventilation units to save more energy in the UK and enable a transition towards net zero?

>IF YES, please provide further evidence and/or data (e.g. energy savings potential; carbon savings potential; technical feasibility; facilitation of behavioural change etc.)

>IF YES, in what timeframe could these minimum energy performance requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. lack of energy savings potential; technical unfeasibility etc.)

27. Could better resource efficiency measures (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) be set under Ecodesign regulations for ventilation units in the UK?

>IF YES, in what timeframe could these resource efficiency requirements be implemented after 1 January 2021? Please choose one of the below options and provide evidence and/or data:

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

>IF NO, why not? Please provide evidence and/or data (e.g. barriers to production; costs etc.)

Taps and showers

28. What is the size of UK manufacturing for taps, shower valves and shower heads in the domestic and non-domestic sectors? Please provide evidence and/or data for each of these product categories separately (e.g. stock, annual sales, rate of replacement, water flow rate, annual water consumption, annual primary energy demand etc.)

29. Are there any existing measures in place which encourage energy and water savings in these products?

>IF YES, how can they be made more effective? Please provide evidence and/or data.

>IF NO, should some be introduced (e.g. restriction of flow rates, mandatory or voluntary labelling)? Please provide evidence and/or data.

30. What more could be done to enhance the resource efficiency (material consumption, emissions, pollution and waste generation, as well as durability, repairability, recyclability and ease of material recovery) of taps, shower valves and shower heads

in the UK? Please provide evidence and/or data for each of these product categories separately

31. **Based on existing technologies, what is the maximum amount of energy and water that could be saved from taps and showers in the following timeframes after 1 January 2021? Please provide evidence and/or data:**

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

Smart appliances

32. **What quantifiable environmental benefits do you see as being potentially available if the UK became international leaders on the regulation of smart appliances?**

33. **Are there any technical barriers in achieving these benefits? Please provide evidence and/or data.**

34. **Would leading in the regulation of smart appliances allow the UK to develop economic benefits from DSR?**

>IF YES, would these economic benefits be exploitable in an export market? Please provide evidence and/or data.

>IF NO, why not? Please provide evidence and/or data.

Heat distribution systems, hot water and heat storage

35. **Do heat emitters, hot water and heat storage products have a high energy savings potential, either directly or as an enabler for the adoption of lower-temperature heating, in the following timeframes after 1 January 2021? Please provide evidence and/or data:**

- **6-12 months**
- **12-24 months**
- **2-3 years**
- **3-5 years**
- **More than 5 years**

Making energy labels more useful for consumers

36. Apart from the products listed in Table 3, are there other energy-related products that could be subject to energy labelling requirements to help increase the uptake of the most energy and resource efficient products? Please provide evidence and/or data.

Improving the UK energy label

37. Are existing energy labels effective in encouraging the purchase of the most energy efficient products? Please choose one of the below and provide further evidence and/or data:

- **Very**
- **Somewhat**
- **Not very**

38. Can energy labels be used to promote more energy efficient in-use practices by consumers? Please provide evidence and/or data.

39. What impact would expanding the scope of energy labels, to include information about resource efficiency, have on consumer purchasing decisions? Please provide evidence and/or data.

40. How can energy labels be made more useful for UK consumers (e.g. by including a product's average lifetime energy costs, by using more/less text or imagery etc.)? Please provide evidence and/or data.

Strengthening UK market surveillance

41. How effective are existing UK market surveillance activities for Ecodesign and Energy Labelling? Please choose one of the below options and provide evidence and/or data:

- **Very**
- **Somewhat**
- **Not very**

42. How effective are existing UK market surveillance activities for products that are purchased online? Please choose one of the below options and provide evidence and/or data:

- **Very**
- **Somewhat**

- **Not very**

43. How can the process of reporting non-compliant businesses and/or products to UK market surveillance authorities be improved?

44. Would the provision of UK Ecodesign and Energy Labelling regulations and guidance in languages other than English help improve levels of compliance?

>IF YES, which language(s) should be prioritised? Please provide evidence and/or data.

>IF NO, why not? Please provide evidence and/or data.

Exploring other policy levers

45. Which of the policy levers listed in Table 5 would be the most effective in making energy-related products more energy and resource efficient in the UK?

46. Are there additional policy levers, which have not been listed in Table 5, that could be effective in market energy-related products more energy and resource efficient in the UK?

Next steps

Once the government has analysed responses to this Call for Evidence, we will publish a summary of these responses. This should be within 12 weeks of the close of this Call for Evidence.

This consultation is available from: www.gov.uk/government/consultations/energy-related-products-call-for-evidence

If you need a version of this document in a more accessible format, please email enquiries@beis.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.

Annexes

Annex A

The table below highlights all of the energy-related products that are currently regulated under EU Ecodesign and Energy Labelling measures and their related pieces of legislation.

Product category	Ecodesign legislation	Energy Labelling legislation
Air conditioners	(EU) No 206/2012 Impact Assessment [SWD(2012) 35] Impact Assessment Summary [SWD(2012) 34] Harmonised standards: 2012/C 172/01, 2014/C 110/01 and 2018/C 092/03	(EU) No 626/2011 Harmonised standards: 2014/C 110/01 and 2018/C 092/03
Domestic ovens, hobs and range hoods	(EU) No 66/2014 Impact Assessment [SWD(2014) 4] Impact Assessment Summary [SWD(2014) 3] Harmonised standards: 2017/C 267/01 Guidelines – May 2015	(EU) No 65/2014 Harmonised standards: 2017/C 267/01 Guidelines – May 2015
Electrical lamps and luminaries	(EC) No 244/2009 Transitional methods of measurement and calculation: 2014/C 22/02 Guidelines – July 2015 Amended by (EC) No 859/2009 Impact Assessment [SEC(2009) 327] Impact Assessment Summary [SEC(2009) 328]	(EU) No 874/2012 Harmonised standards: (2014/C 22/02) Guidelines – July 2015 NB: From 25 December 2019 onwards, the labelling of luminaires will no longer be required

Product category	Ecodesign legislation	Energy Labelling legislation
	(EC) No 245/2009 Transitional methods of measurement and calculation: 2014/C 22/02 Guidelines – July 2015 Amended by (EU) No 347/2010 Impact Assessment [SEC(2009) 324] Impact Assessment Summary [SEC(2009) 325] (EU) No 1194/2012 Impact Assessment [SWD(2012) 419] Impact Assessment Summary [SWD(2012) 418] Communication on the market assessment on the mains-voltage lamps COM/2015/0443 Transitional methods of measurement and calculation:: 2014/C 22/02 Guidelines – July 2015 (EU) 2015/1428 (amending Regulations (EC/EU) 244/2009, 245/2009 and 1194/2012) Repealed by (EU) 2019/2020 – in application from 1 September 2021 Impact Assessment [SWD/2019/0357] Executive Summary of the Impact Assessment [SWD/2019/0358] (EC) 244/2009	Repealed by (EU) 2019/2015 – in application from 1 September 2021

Product category	Ecodesign legislation	Energy Labelling legislation
Household dishwashers	(EU) No 1016/2010 Impact Assessment [SEC(2010) 1356] Impact Assessment Summary [SEC(2010) 1357] Harmonised standards: 2014/C 22/05 Repealed by (EU) 2019/2022 - in application from 1 March 2021 Impact Assessment [SWD/2019/0347] Executive Summary of the Impact Assessment [SWD/2019/0348]	(EU) No 1059/2010 Harmonised standards: 2014/C 22/05 Repealed by (EU) 2019/2017 – in application from 1 March 2021
Household refrigerating appliances	(EC) No 643/2009 Impact Assessment [SEC(2009) 1020] Impact Assessment Summary [SEC(2009) 1021] Harmonised standards: 2014/C 22/03 Repealed by (EU) 2019/2019 – in application from 1 March 2021 Impact Assessment [SWD/2019/0341] Executive Summary of the Impact Assessment [SWD/2019/0342]	(EU) No 1060/2010 Harmonised standards: 2014/C 22/03 Transitional methods of measurement and calculation: 2011/C 049/05 – NB: relevant for noise only Repealed by (EU) 2019/2016 – in application from 1 March 2021
Household tumble dryers	(EU) No 932/2012 Impact Assessment [SWD(2012) 289] Executive Summary of the Impact Assessment [SWD(2012) 290]	(EU) No 392/2012 Harmonised standards: 2014/C 149/01

Product category	Ecodesign legislation	Energy Labelling legislation
	Harmonised standards: 2014/C 149/01	
Household washing machines	(EU) No 1015/2010 Impact Assessment [SEC(2010) 1354] Impact Assessment Summary [SEC(2010) 1353] Harmonised standards: 2016/C 416/01 Repealed by (EU) 2019/2023 – in application from 1 March 2021 Impact Assessment [SWD/2019/0349] Executive Summary of the Impact Assessment [SWD/2019/0351]	(EU) No 1061/2010 Harmonised standards: 2016/C 416/01 1996/60/EC Harmonised standards: 2016/C 416/02 Repealed by (EU) 2019/2014 – in application from 1 March 2021
Local space heaters	(EU) 2015/1188 Impact Assessment [SWD(2015) 90] Executive Summary of the Impact Assessment [SWD(2015) 91] Transitional methods of measurement and calculation: 2017/C 076/02 Guidelines – November 2017 (EU) 2015/1185 Transitional methods of measurement and calculation: 2017/C 076/02 Guidelines – November 2017	(EU) 2015/1186 Transitional methods of measurement and calculation: 2017/C 076/02 Guidelines – November 2017
Professional refrigerated storage cabinets	(EU) 2015/1095 Impact Assessment [SWD(2015) 97]	(EU) 2015/1094

Product category	Ecodesign legislation	Energy Labelling legislation
	Executive Summary of the Impact Assessment [SWD(2015) 96] Transitional methods of measurement and calculation: 2017/C 044/01 FAQ – April 2018	Transitional methods of measurement and calculation: 2017/C 044/01 FAQ – April 2018
Residential ventilation units	(EU) No 1253/2014 Impact Assessment [SWD(2014) 222] Executive Summary of the Impact Assessment [SWD(2014) 223] Transitional methods of measurement and calculation: 2016/C 416/06 Mandate M/537 : C(2015) 8325 Guidelines – October 2016	(EU) No 1254/2014 Transitional methods of measurement and calculation: 2016/C 416/06 Mandate M/537: C(2015) 8325 Guidelines – October 2016
Solid fuel boilers and packages of a solid fuel boiler, supplementary heaters, temperature controls and solar devices	(EU) 2015/1189 Impact Assessment [SWD(2015) 92] Executive Summary of the Impact Assessment [SWD(2015) 93] Guidelines - 2018 Mandate M/551: C(2016) 7764	(EU) 2015/1187 Transitional methods of measurement and calculation: 2017/C 076/01 Guidelines - 2018 Mandate M/551: C(2016) 7764
Space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heaters, temperature control and solar devices	(EU) No 813/2013 Impact Assessment [SWD(2013) 297] Executive Summary of the Impact Assessment [SWD(2013) 296] Transitional methods of measurement and calculation: 2014/C 207/02	(EU) No 811/2013 Transitional methods of measurement and calculation: 2014/C 207/02 Tool for calculating the energy efficiency of packages of space, water and combination heaters Mandate M/535: C(2015)2626

Product category	Ecodesign legislation	Energy Labelling legislation
	Mandate M/535: C(2015)2626 Guidelines – 2018	Guidelines – 2018
Electronic displays and televisions	(EC) No 642/2009 Impact Assessment [SEC(2009) 1011] Impact Assessment Summary [SEC(2009) 1012] Guidelines – October 2009/with up-date November 2014 Amended by (EU) No 801/2013 Impact Assessment [SWD(2013) 306] Executive Summary of the Impact Assessment [SWD(2013) 305] Guidelines – 2014 Repealed by (EU) 2019/2021 – in application from 1 March 2021 Impact Assessment [SWD/2019/0354] Executive Summary of the Impact Assessment [SWD/2019/0355]	(EU) No 1062/2010 Repealed by (EU) 2019/2013 – in application from 1 March 2021
Vacuum cleaners	(EU) No 666/2013 Impact Assessment [SWD(2013) 240] Executive Summary of the Impact Assessment [SWD(2013) 241] Harmonised standards: 2017/C 267/02 Mandate M/540: C(2015)8733 Guidelines – September 2014	n/a

Product category	Ecodesign legislation	Energy Labelling legislation
Water heaters, hot water storage tanks and packages of water heater and solar device	(EU) No 814/2013 Impact Assessment [SWD(2013) 295] Executive Summary of the Impact Assessment [SWD(2013) 294] Transitional methods of measurement and calculation: 2014/C 207/03 Mandate M/534: C(2015)2625 Guidelines - 2018	(EU) No 812/2013 Transitional methods of measurement and calculation: 2014/C 207/03 Mandate M/534: C(2015)2625 Tool for calculating the energy efficiency of packages of space, water and combination heaters Guidelines - 2018
Household combination washer-dryers	N/A	96/60/EC (see Regulation (EU) No 1061 2010)
Air heating products, cooling products, high temperature process chillers and fan coil units	(EU) 2016/2281 Impact Assessment [SWD(2016)422] Executive Summary of the Impact Assessment [SWD(2016)421] Guidelines – July 2018	n/a
Circulators (glandless standalone circulators and glandless circulators integrated in products)	(EC) No 641/2009, Impact Assessment Part 1 [SEC(2009) 1016] Impact Assessment Part 2 Impact Assessment Part 3 Impact Assessment Part 4 Impact Assessment Summary [SEC(2009) 1017]	n/a

Product category	Ecodesign legislation	Energy Labelling legislation
	Amended by (EU) No 622/2012	
Computers and computer servers	(EU) No 617/2013 Impact Assessment [SWD(2013) 219] Executive Summary of the Impact Assessment [SWD(2013) 218] Guidelines – June 2014 (EU) 2019/424 (servers and data storage products) Impact Assessment [SWD/2019/0106] Executive Summary of the Impact Assessment [SWD/2019/0105]	n/a
Electric motors	(EC) No 640/2009 Impact Assessment [SEC(2009) 1013] Impact Assessment Summary [SEC(2009) 1014] Guidelines – December 2014 Amended by (EU) No 4/2014 Repealed by (EU) 2019/1781 – in application from 1 July 2021 Impact Assessment [SWD/2019/0343] Executive Summary of the Impact Assessment [SWD/2019/0344]	n/a
External power supplies (no-load condition electric power consumption and average active efficiency of external power supplies)	(EC) No 278/2009 Impact Assessment [SEC(2009) 434] Executive Summary [SEC(2009) 435]	n/a

Product category	Ecodesign legislation	Energy Labelling legislation
	Rules to reduce electricity consumption of external power supplies Repealed by (EU) 2019/1782 – in application from 1 April 2020 Impact Assessment [SWD/2019/0345] Executive Summary of the Impact Assessment [SWD/2019/0346]	
Fans driven by motors with an electric input between 125 W and 500 kW	(EU) No 327/2011 Impact Assessment [SEC(2011) 384] Impact Assessment Summary [SEC(2011) 385]	n/a
Simple set-top boxes	(EC) No 107/2009 Impact Assessment [SEC(2009) 114] Impact Assessment Summary [SEC(2009) 113]	n/a
Small, medium and large power transformers	(EU) No 548/2014 Impact Assessment [SWD(2014) 162] Executive Summary of the Impact Assessment [SWD(2014) 161] Amended by (EU) 2019/1783 Impact Assessment [SWD/2019/0306]	n/a
Standby and off mode electric power consumption of electrical and electronic household	(EC) No 1275 /2008, Amended by (EU) No 801/2013 Impact Assessment [SWD(2013) 306]	n/a

Product category	Ecodesign legislation	Energy Labelling legislation
and office equipment	Executive Summary of the Impact Assessment [SWD(2013) 305] Guidelines – November 2014	
Water pumps	(EU) No 547/2012 Impact Assessment [SEC(2012) 178] Executive Summary of the Impact Assessment [SEC(2012) 179]	n/a
Welding equipment	(EU) 2019/1784 – in application from 1 January 2021 Impact Assessment [SWD/2019/0340] Executive Summary of the Impact Assessment [SWD/2019/0339]	n/a
Refrigerating appliances with a direct sales function	(EU) 2019/2024 – in application from 1 March 2021 Impact Assessment [SWD/2019/0352] Executive Summary of the Impact Assessment [SWD/2019/0353]	(EU) 2019/2018– in application from 1 March 2021