



Department
for Transport



Air Pollutant Emissions from Domestic Vessels and Inland Waterways – A Call for Evidence

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1. Introduction

1.1 The Clean Air Strategy: Government's commitment to tackle poor air quality

Poor air quality is one of the most significant risks posed to public health in the UK. The World Health Organisation has concluded that long-term exposure to air pollution reduces life expectancy, increasing deaths from circulatory, respiratory and heart conditions. The emission of air pollutants also has an impact on our natural environment, adversely affecting our waterways, biodiversity and crop yields.

The Government recognises the need to take action to save lives, improve the nation's quality of life and protect the natural environment. Opportunities to reduce air pollutant emissions are thus being sought across all sectors, and the Government has already set ambitious emissions reduction targets to meet this challenge.

In January 2019, the Government published its [Clean Air Strategy](#) setting out the actions to be taken to tackle poor air quality attributable to a wide range of sources. This is a major, long-term, programme of measures, which includes a number of high profile Government commitments such as "Road to Zero", The Road to Zero Strategy outlines how the government will support the transition to zero emission road transport and reduce emissions from conventional vehicles during the transition.

Indeed, mitigating air pollutant emissions from the transport sector is a key focus of the Clean Air Strategy, and for the first time, the Government has brought forward measures that respond specifically to emissions from the maritime sector, including recreational vessels and those operating inland waterways. In summary these measures are:

- This Call for Evidence to gather information on vessels operating domestically in UK waters as a whole including in inland waterways.
- A consultation on options for extending the existing Emissions Control Area in the North Sea and English Channel to other parts of the UK's waters and
- A commitment from the Department for Transport to publish guidance for major ports in England, in order to facilitate their development of individual port air quality strategies.

This document represents the first of these commitments: a Call for Evidence on those vessels operating domestically in the UK, **we are primarily focused on those vessels not currently subject to international environmental standards for air pollutant emissions** (whether established by the EU or the United Nations through

the International Maritime Organization –the “IMO”) but would welcome information on vessels operated domestically that were built to EU or IMO rulesets. The aim of this Call for Evidence, as set out in the Clean Air Strategy, is:

“...to collect a body of evidence that will allow us to understand more clearly the extent of emissions from vessels which do not currently fall within the remit of environmental regulations, which are currently mainly based on UK implementation of international conventions.”

This diverse group of vessels includes both modern craft that are currently unregulated, and vessels that form part of a legacy fleet that were built before modern environmental standards were implemented. In the development of the Clean Air Strategy it was identified that emissions from these vessels were potentially of concern, and that due to a lack of centralised information to date, a Call for Evidence was required to better understand if a significant problem exists, and to help shape any future policy responses.

Alongside this Call for Evidence the Department is undertaking detailed environmental and economic modelling work to better understand the scope and nature of emissions in the UK, and to identify trends that may shape future policy decisions. This work is ongoing and the results of this Call for Evidence will be fed back into this modelling to enhance and refine Governments understanding of the sector.

2. Maritime 2050 and the Clean Maritime Plan: the Government's ambition for a zero-emissions maritime sector by 2050

In addition to supporting the specific measures in the Government's Clean Air Strategy to tackle air pollutant emissions from the UK's maritime and inland waterways sectors, the Department for Transport has the long-term ambition to see a transition to low and eventually zero emissions. The expectation that the maritime sector will transition away from fossil fuels, as set out in the Department's [Maritime 2050 Strategy](#) (published in January 2019), extends to all parts of the sector, including those vessels on inland waterways and in coastal waters that the Department is seeking to gather information on through this Call for Evidence.

The steps the UK could take in the short, medium and long-term to make the zero emissions ambition a reality will be contained within the Department's **Clean Maritime Plan**. The aim of the Plan is to promote innovation and encourage the uptake of zero emission technologies in the maritime sector, rather than prescribe a specific approach or set of measures for vessel owners and industry to take:

"The UK Clean Maritime Plan, which will be published in 2019, will seek to consider the barriers to market for technological solutions to achieving zero emission shipping and the potential for the UK to capture our share of the economic benefits from this transition."

The Clean Maritime Plan will be the beginning of a wider dialogue with industry and the public over steps to deliver low and ultimately zero emissions shipping. In order to further develop technically-sound and proportionate policy measures to meet the Department's ambition for a zero emissions maritime sector, the Department is now focused on reviewing and where necessary establishing the evidence base needed for effective policymaking. This Call for Evidence forms part of this important information-gathering process and is intended to illuminate areas of the sector where data is currently sparse or lacking.

3. This Call for Evidence – what is being sought, and how you can contribute

3.1 What information is being sought in this process?

This Call for Evidence represents a crucial step in securing the technical knowledge and data policymakers at the Department will need to develop effective and proportionate policies to tackle air pollutant emissions from vessels operating in inland waterways and coastal waters around the UK. Powered vessels used for commercial or recreational purposes are all within scope of this Call for Evidence.

While the Call for Evidence focuses on quantifiable information as it is intended to inform wider public policy the Department recognises that in many cases qualitative evidence may be very important in informing next steps. We would welcome contributions that consider this wider context.

There are six principal evidence gaps that policymakers wish to address through this Call for Evidence and wider research being undertaken by the Department

1. **The size and key characteristics of this sector**—An estimate of the total number of vessels and vessel types operating in England’s inland waterways and the UK’s coastal waters, as well as the age, engine size, and fuel type of these vessels. This information will assist the Department in quantifying the emissions produced by the propulsion engines of relevant vessel types, which is essential information for the understanding of this sector.
2. **The functioning of the current regulatory landscape governing air pollutant emissions from vessels operating in England’s inland waterways and UK coastal waters** - This includes the identification of any gaps in the existing regulatory framework or inconsistencies that have led to poor environmental or business outcomes.
3. **Innovative approaches being taken in this sector** –The Department recognises that these sectors are highly diverse and include many innovative actors. Therefore, the Department would welcome responses that identify potential abatement methods, green technologies or opportunities for innovation that can mitigate the emission of air pollutants from vessels.

- 4. Identification of potential market failures or barriers (technical, commercial, financial, cultural) to the deployment of emissions abatement and reduction options in this sector (for instance infrastructure requirements or possible unintended consequences).** As part of the responses to this section, the Department would welcome solutions to these barriers and suggestions in relation to the role Government can play in removing or minimising them.

In particular we would seek the views of consultees on social and cultural factors that could influence the success or failure of measures to reduce emissions from the sector – for example could Government usefully publicise best practice and early adopters to encourage sectoral change?

- 5. Longer term trends in the sector** – Here we are seeking to better understand likely changes in the inland waterways and coastal fleet in order to better shape any policy outcomes.

The Department would value information on the long term forecasts of vessel numbers, trends in operating profile and fuel type, fleet replacement rates and the uptake of new technologies or abatement measures.

A better understanding of these trends will allow the Department to assess to what extent a movement to lower emission vessels is underway already and how the overall impact of these changes on the fleet will change in relation to emissions.

- 6. Funding** – The Department is aware that some non-Government/private sector funding for innovation and infrastructure in the maritime sector is available, and which could in some cases be accessed to facilitate research into low and zero emission vessels.

The Department would welcome responses from businesses and organisations that provide such financial support, setting out what funds are available and the conditions for accessing it. Additionally, respondents may wish to highlight where they see gaps in funding for innovation and infrastructure.

3.2 Why are we looking at Coastal Shipping and Inland Waterways together?

The Department recognises that these are different sectors, and that within these broad definitions there are many sub-sectors that may have their own operational and technical challenges. The decision to approach both groups together as one sector is driven by much of the historic data and analysis which have considered these vessels as part of the same sector - for example in carbon accounting 'domestic shipping' covers any fuel sold to vessels not engaged in international trade. In part, this Call for Evidence is intended to allow us to better understand the diversity in this area, and better tailor any future policy responses.

3.3 Who is this Call for Evidence aimed at?

The Department invites participation from any organisation, group, business or individual who can provide information on vessels operating domestically in the UK's coastal waters and English inland waterways. We are interested in all relevant evidence but respondents do not need to address every question if their evidence and/or expertise is only relevant to certain questions.

3.4 How to respond

The consultation period for this Call for Evidence will run between 11 July 2019 and 11 January 2020. You are invited to respond to the Call for Evidence by sending your response to: domesticshipping@dft.gov.uk. Please ensure that your response reaches us before the closing date. If you would like further copies of this document you can request copies by emailing domesticshipping@dft.gov.uk

In setting a six-month window for this call for evidence the Department has sought to recognise that the summer season is particularly busy for many small craft operators who form a key group of respondents.

A summary of responses, will be published within three months of the close of the Call for Evidence. Paper copies will be available on request. The Call for Evidence is being conducted in line with the Government's key consultation principles. Further information is available at [online](#).

If you have any comments about the Call for Evidence process please contact the Consultation Co-ordinator at consultation@dft.gov.uk. Please do not send the Call for Evidence responses to this address.

3.5 How will responses to this call for evidence be used?

Responses received from this Call for Evidence will feed into the Governments wider development of policies to mitigate emissions from vessels. The evidence base established will help policymakers to consider and if appropriate develop effective and proportionate actions to address the issue.

3.6 Freedom of Information and Data Protection

The Department is carrying out this Call for Evidence in order to gather information on vessels operating domestically in UK waters as a whole, including in inland waterways. This Call for Evidence and the processing of personal data that it entails is necessary for the exercise of our functions as a government department. If your answers contain any information that allows you to be identified, the Department will, under data protection law, be the Controller for this information.

As part of this consultation we're asking for your name and email address. This is in case we need to ask you follow-up questions about any of your responses. You do not have to give us this personal information. If you do provide it, we will use it only for the purpose of asking follow-up questions.

The Department's privacy policy has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer. You can view it at the [Personal Information Charter webpage](#). To receive this information by telephone or post, contact us on 0300 330 3000 or write to Data Protection Officer, Department for Transport, Ashdown House, Sedlescombe Road North, St Leonards-on-Sea, TN37 7GA.

Your personal information will be kept securely and destroyed within 12 months after the consultation has been completed.

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory code of practice with which public authorities must comply and which deals, amongst other things, with obligations of confidentiality.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

4. Background to this Call for Evidence

Size and characteristics of the sector

4.1 Inland waterways

The Department understands that this is a complex area with a diverse range of vessels and stakeholders. Many vessels operated on inland waterways are used on an irregular or infrequent basis (e.g. recreational craft), while others may be used more frequently (e.g. small passenger ferries and cargo ships); and that use may include temporary or even permanent residence. With regards to their power sources, some vessels may be equipped with more than one engine and different types of fuels may be used for different purposes, mainly to propel the vessel, but also in auxiliary engines (e.g. on service vessels) and for heating and internal power.

As stated earlier in this Call for Evidence, the Department would like to quantify the total number as well as different types of vessels operating on inland waterways, and would look to the navigation authorities to provide this information, if available. Additional information is also sought on the purposes of these vessels (recreational, commercial, residential etc.); their key characteristics (as set out in the preceding section); a quantification of their emissions; and the barriers to reducing their contribution to poor air quality.

4.2 Coastal waters, tidal rivers and estuaries (inclusive of private recreational and commercial vessels)

Concerning those vessels operating in the UK's coastal waters, tidal rivers and estuaries, the Department does not currently have a coherent picture of the emissions that arise from this sector or its full scale. We expect both recreational and commercial vessels to fall into this category.

The Call for Evidence is focused on those vessels that operate on a purely domestic basis and do not generally make international journeys unless under a loadline exemption or similar. One particular evidence gap that has been identified relates to older vessels that have re-entered commercial or recreational use following extended periods of layup.

4.3 Current quantification of emissions from the concerned domestic vessels

In 2010, a Department for Energy and Climate Change (DECC) study, assessing the feasibility of establishing a greenhouse gas emissions inventory for the inland waterways sector, captured the challenge of quantifying air pollutant emissions from inland waterway vessels:

“Inland waterways, like other off-road machinery sources of emissions, is a complex source to cover in an emissions inventory on a national scale because it is a diffuse source, involves a wide variety of vessels operating for a multitude of purposes (both commercial and recreational) with no centrally-held statistics on either the total amounts of fuel supplied or consumed by the sector or on the vessel population and usage patterns.”

Similarly, the Department still does not have a well-developed understanding of the extent to which air quality impacts are attributable to inland waterway vessels or vessels in coastal waters.

According to the National Atmospheric Emissions Inventory (NAEI), emissions from domestic shipping (ships that start and end their journey in the UK) accounted for 10% of the UK's total domestic NO_x emissions, 2% of PM_{2.5} and 7% of SO₂ in 2016.

Regulatory landscape

- 4.4 The regulatory landscape for both inland and domestic vessels is currently fragmented and is dependent on the age of vessel, the age of the vessel's engine and capacity, and the intended or actual use of the vessel.

This takes the form of a patchwork of standards for vessels, including international controls (MARPOL) being applied in some domestic contexts, market entry requirements (such as the RCD), and regimes drawn from wider environmental measures such as the Non-Road Mobile Machinery requirements.

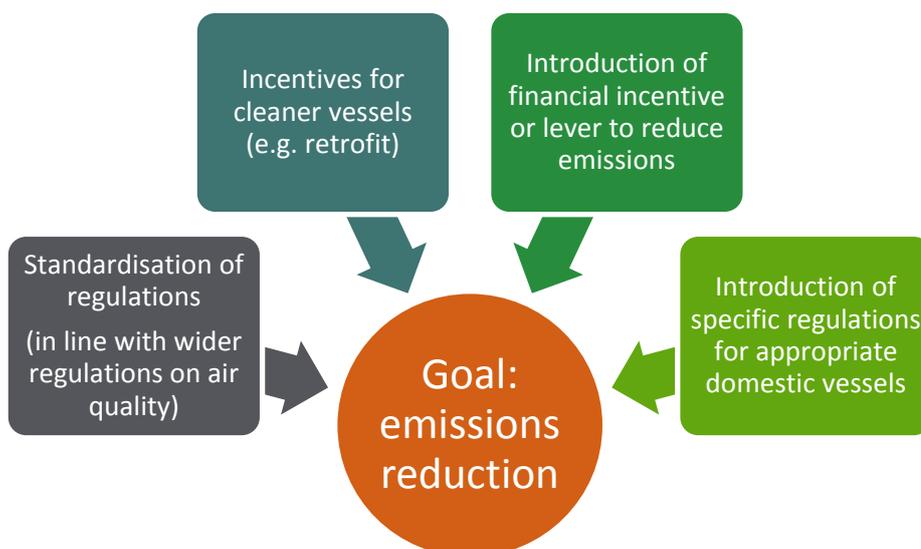
This fragmentation has created significant barriers to understanding emissions from vessels, and is increasingly a barrier to identifying where supportive or regulatory action could be necessary.

Additionally the Department is aware that both vessel operators, and equipment suppliers, are discouraged from investment in both R&D and the deployment of innovative technology, due to incomplete knowledge of the regulatory environment.

5. Possible next steps - future policy development

- 5.1 Once responses to this Call for Evidence have been collected and analysed, the Department will seek to use this new information to inform potential policy interventions (if required) to mitigate the emission of air pollutants from the concerned domestic vessels. The development of any new policy measure(s) will focus on what is proportionate and technically-sound, taking into consideration where emission reductions are most needed and changes can be most feasibly achieved and we would undertake formal stakeholder engagement and consultation before progressing any measures. The Department also reserves the right to exempt certain types of vessels from the scope of its policies.

At this point in time the Department is not advancing any particular outcome, but to provide consultees with examples of possible interventions the following approaches have been taken in other transport sectors, for example in the automotive sector:



Note: the above diagram is only indicative of *possible* policy options. Following a review of responses to the Call for Evidence, it may be that one, some or none of these measures are pursued by the Department.

6. Call For Evidence – Questions and Definitions

6.1 How to answer these questions?

Respondents do not need to answer every question here. It is advisable to answer those questions where you have relevant expertise or knowledge to share with the Department. A specific set of questions tailored for navigation authorities and port and harbour authorities can be found at the end of this section.

Some questions are provided with additional explanatory text to provide context, where this appears it will be in *italics*.

6.2 Definitions:

“Concerned vessels” – those vessels that operate domestically on inland waterways and/or in the UK’s coastal waters.

The Department considers the following vessels to be within scope of this Call for Evidence:

- Private, recreational or residential craft used on rivers, canals and lakes;
- Commercial passenger craft used on rivers, canals and lakes;
- Service vessels/workboats (e.g. small tugs, floating excavators etc) used on rivers and canals;
- River barges and other freight carrying vessels going up wide river stretches and tidal estuaries;
- Private, recreational craft used on tidal rivers and estuaries, occasionally going out to sea, e.g. sailing yachts (with auxiliary engines), motor boats, cabin cruisers, small fishing vessels, speed boats, personal watercraft;
- Service boats/workboats used by port and harbour authorities, e.g. tugs;
- Small ferries crossing estuaries, but not going out to sea.
- Vessels engaged solely in voyages in UK waters (domestic vessels including fishing vessels).

“Air pollutant emissions” – for the purposes of this Call for Evidence, the Department is primarily concerned with the emission of Nitrogen Oxides (NO_x), Sulphur Oxides (SO_x), and Particulate Matter (PM). However, if respondents wish to provide evidence on the emission of other air pollutants (and Greenhouse Gases / “GHGs”), the Department would welcome this contribution.

FOR ALL RESPONDENTS (individuals, organisations, businesses etc.)

1. Your Details

Name:

Organisation (if appropriate):

2. General questions on size and characteristics of the sector

Please provide details of the different types of vessels that you know of (in England's inland waterways and/or the UK's coastal waters) that are NOT currently subject to environmental standards for air pollutant emissions.

Where possible, please estimate the number of each type of these vessels in operation.

We recognise it will not be possible to provide accurate estimates for all vessel types but would appreciate a view from stakeholders on both the broad scale of the sector, and any detailed knowledge they have of vessels in their area of expertise (for example a single Navigation).

Where you have detailed knowledge of such vessels please provide (if possible) information on:

- a. *age;*
- b. *engine('s) age (both propulsion and any auxiliary systems)*
- c. *engine sizes*
- d. *fuel types*
- e. *annual fuel consumption*
- f. *annual hours of usage*
- g. *typical load factors*
- h. *average rated horsepower*

3. Emissions from the Sector

Do you consider that the air quality impact of the concerned vessels is a concern?

Do you hold any views or data in relation to these air quality impacts?

Are you aware of any industry or academic research that is relevant to this Call for Evidence?

4. Current regulatory landscape

Are you aware of any cases where an existing regulatory regime is not working effectively or is creating an unintended negative outcome for business or the environment?

As an example, the Department is aware that historically some vessels have changed use and effectively entered a regulated trade with an unregulated engine giving the new entrant a commercial advantage over compliant ships.

Are you aware of any appropriate standards or regulatory approaches that could be translated to the sector to reduce emissions?

5. Innovation in the sector

Are you aware of any innovations in your part of the sector, or wider maritime transport that could help mitigate pollutant emissions from the concerned vessels?

Do you have any views on what Government could do to promote innovation in the sector?

6. Barriers to mitigating emissions from the concerned vessels

Considering the design, construction and equipment currently used on board the concerned vessels, and the infrastructure requirements of alternative propulsion methods, what are the technical barriers to mitigating the emission of air pollutants?

Some measures to mitigate air pollutant emissions could involve retrofitting, or indeed scrapping vessels, what would the estimated financial costs of such steps be?

7. Solutions to existing barriers to mitigating emissions

What are the technical solutions to overcoming barriers to mitigating emissions from the concerned vessels? Please refer to the barriers you have outlined in the above section.

Can you see a role for Government in facilitating the mitigation of air pollutant emissions from the concerned vessels? What role could the Government take?

Referring to the diagram on possible policy interventions in the “Future Policy Development” section of this Call for Evidence, what is your view on these Department’s possible policy interventions?

Do you have any alternative suggestions of measures the Department could consider?

8. Unintended Consequences of Policy Interventions

Do you consider that there is a risk of unintended or underestimated consequences if Government seeks to intervene in the sector? Do you have any examples of issues that could arise?

As examples – a scheme focused on existing vessels could lead to pressure to scrap some ships, leading to a problem with recycling capacity, or a financial incentive to support new technology could result in undue market distortion negatively impacting existing operators.

9. Longer Term Trends in the Sector

In relation to trends in your sector, or the sector as a whole, do you have any information on (with regards to the concerned vessels):

1. The lifetime of vessels and the turnover/replacement rate of old vessels with new builds;

2. Information on the types of new vessels expected to be built;
3. Information on the future fuels these vessels are likely to use; and
4. The potential for the “greening” of this sector, so that air pollutant emissions are effectively and proportionally tackled.

10. Additional information

Please provide any additional information that you consider may be of use to policymakers or areas where you feel more research/evidence is required.

11. Specific Questions for Vessel Owners and Operators

Has the vessel ever been re-engined or have you considered re-engining your vessel? If you have considered re-engining, but decided against doing so, what were the reasons for not replacing the engine?

What regulatory regime (if any) does your engine/vessel operate within – for example the Recreational Craft Directive, MARPOL or NRMM regimes.

Where is the vessel moored or stored? (For example: ashore; home or commercial storage premises; marina; private land; river or canal bank; buoy etc.)

Do you have access to shore power points?

12. Specific questions for Navigation Authorities, Port and Harbour Authorities

If possible, please provide an estimate of the air pollutant emissions for the types of vessel operating under your area of jurisdiction.

If relevant, please provide information on any steps being taken to reduce the emissions from these vessels – for example provision of plug-in-power when alongside or the provision of innovative fuels.

If relevant, please provide non-personal, non-individualised information on the membership/users of your waterways/ marina/ boatyard/ club/ organisation so that the Department understands who any potential future policies will impact upon. *For example, a snapshot of the number of users who would fall into broad commercial/recreational groupings, estimates of numbers of users who live afloat etc.*

If possible, please provide an estimated quantification of the air pollutant emissions (disaggregated by air pollutants as defined above) attributable to each type of vessel operating on waters under your authority

If relevant please provide information on any steps being taken in the waters under your authority) to reduce emissions – for example provision of plug-in-power when at berth or the provision or bunkering of alternative fuels.

13. Specific Questions for marinas, boatyards and boat storage companies:

How many berths do you supply?

What percentage of your capacity do you provide electrical connections to?

Do you have sufficient electrical supply to provide electricity to your berth holders?

Do you source electrical power from renewable sources? (e.g.: local solar/wind or via a renewable energy tariff from the grid)

Do you have any views on how Government could encourage the supply of renewable power at point of use in your sector?
