



Department
for Environment
Food & Rural Affairs

Air Quality: Consultation on the draft National Air Pollution Control Programme

July 2022



Scottish Government
Riaghaltas na h-Alba
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Department of
Agriculture, Environment
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We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.



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1. About this consultation

1.1 Overview

The UK government along with Scottish Government, Welsh Government and the Northern Ireland Executive (the devolved administrations) are strongly committed to improving air quality and the associated benefits for public health and the natural environment. Air pollution does not recognise national or international boundaries. Therefore, emissions in one nation can have an impact on air quality across the rest of the UK. In recognition of this, the UK government and the devolved administrations are working collaboratively to understand at a UK level what action is needed to improve air quality and the quality of life for current and future generations.

The UK government and the devolved administrations are conducting a consultation on the revised draft National Air Pollution Control Programme (NAPCP). First published in 2019, the NAPCP sets out policies and measures, as well as supporting technical analysis, that may be required in order to limit emissions in accordance with the Emission Reduction Commitments (ERCs) set under the National Emission Ceilings Regulations 2018 ([‘the NECR’](#)).

The NECR set out legally binding emission reduction commitments (ERCs) for five air pollutants: fine particulate matter (PM_{2.5}), sulphur oxides (SO_x), nitrogen oxides (NO_x), ammonia (NH₃) and non-methane volatile organic compounds (‘NMVOCs’) for 2020 and 2030. In March 2022 the UK published its inventory in relation to the 2020 emission reduction commitments. The inventory showed the UK had met domestic and international 2020 ceilings for emissions of NMVOCs, PM_{2.5}, NO_x and SO₂. The UK had not met the 2020 ceiling for emissions of ammonia (NH₃). However, as permitted under the NECR, the UK has prepared an adjusted 2020 emissions inventory in relation to NH₃ to take account of improvements to the methodology for calculating emissions from non-manure digestates. The UK has submitted the adjusted inventory for scrutiny by United Nations Economic Commission for Europe (UNECE) experts. The outcome of the review will be known by September 2022.

The UK emission projections published in March 2021 showed that there was a risk that the UK might exceed its emission reduction commitments for PM_{2.5} and NH₃ between 2020-29, and the 2030 emission reduction commitments for PM_{2.5}, NH₃, SO₂ and NO_x. Updated emission projections published alongside this consultation show that the UK is now not at risk of exceeding its 2020-29 emission reduction commitment for PM_{2.5}. Due to the 2021 projections, under the regulations the Secretary of State is required to review the UK National Air Pollution Control Programme by 15 September 2022. The legislation also states that any significant revision of the NAPCP must be subject to a public consultation. This consultation on the draft NAPCP will run for 6 weeks from 25 July to 4 September.

Whilst air quality is a devolved matter, the NECR are UK-wide and so the UK government, Scottish Government, Welsh Government and the Northern Ireland Executive are working together to develop measures to improve air quality and reduce emissions across the UK.

1.2 Context

The UK government and the devolved administrations focus their activity on reductions of emissions and concentrations of the five key pollutants mentioned above. Emissions are the total amount of pollutant matter emitted into the atmosphere, whereas concentrations relate to the level of pollutant matter in ambient air. Regulation of concentrations are set out in relevant national legislation - the [Air Quality Standards Regulations 2010](#), the [Air Quality Standards \(Wales\) Regulations 2010](#), the [Air Quality Standards \(Northern Ireland\) 2010](#) and the [Air Quality Standards \(Scotland\) Regulations 2010](#).

In addition, England is setting new concentration targets for PM_{2.5} under the Environment Act 2021. The Environment Act 2021 establishes a duty to set a concentration target on PM_{2.5} alongside at least one further long-term target on air quality as part of the wider framework for setting legally binding environmental targets. Consultation on the new targets took place from March to June 2022 and draft regulations will follow appropriate consideration of consultation responses.

The NAPCP is focussed on emissions. The NECR transposed the requirements of the National Emission Ceilings (NEC) Directive (2016/2284/EU) into UK law when the UK was an EU member state. The regulations require overall reductions in UK anthropogenic emissions of five air pollutants. These national ERCs need to be met in two phases, from 2020 to 2029 in line with commitments set by the amended Gothenburg Protocol under the International Convention on Long-Range Transboundary Air Pollution (CLRTAP) of which the UK is a party, with more stringent levels to be met from 2030 onwards. The 2030 targets are only set in the EU Directive and UK regulations and have no basis in the CLRTAP. There is also a requirement in the regulations that the total anthropogenic emissions of each of the relevant pollutants do not exceed the linear reduction trajectory unless the Secretary of State determines that it is necessary to do so because it is economically or technically more efficient.

In addition to setting out the ERCs, the Directive required each member state to draw up, adopt and implement a National Air Pollution Control Programme (NAPCP) with a view to complying with the emission reduction commitments. The commitment was transposed into UK law in Part 4 of the National Emissions Ceilings Regulations. The format and content of the NAPCP is set out in Commission Implementing Decision 2018/1522 which, by virtue of the European Union (Withdrawal) Act 2018, forms part of the UK's retained EU law.

Under the UK Air Quality Framework, we will review the aims and requirements of the NAPCP to consider the best approach for achieving the UK's ambition for clean air. We want to ensure we are taking the most effective and ambitious action across all administrations within the UK to tackle air pollution. For England, greater coherence with new national review and monitoring obligations, such as those contained in the Environment Act, will enable us to drive action to tackle air pollution in a more integrated and strategic way and avoid duplication of reporting and reviewing obligations.

1.3 UK NAPCP overview

The NAPCP is a largely technical document which assesses the emission reduction (abatement) potential of a range of policies and measures which could be deployed in order to limit emissions with a view to complying with the ERCs.

Updated 2022 projections (published alongside this consultation) show that without any additional policies and measures:

- In 2025, the UK is likely to be compliant with the NECR 2020-29 for NO_x, SO_x, NMVOCs, and PM_{2.5} but there is a risk the UK may miss ERCs for NH₃.
- For 2030, the UK is on track to meet 2030 NECR targets for NMVOCs but there is a risk the UK may miss ERCs for NO_x, SO_x, NH₃ and PM_{2.5}.

In the revised draft NAPCP the UK government and devolved administrations have outlined the policies and measures (PaMs) which will be considered further in order to reduce emissions in accordance with the national emission reduction commitments and those which will not be considered further at this stage.

Policies and measures (PaMs) which will be considered further are not firm government policy. They continue to be subject to further policy analysis, development, consultation and government decision processes.

The policies and measures which will be considered further fall within 7 packages which are detailed in section 2.6.1. The packages include:

1. **Solid fuels** - domestic burning is a major contributor to PM_{2.5} emissions. This package could include policies and measures relating to the types of solid fuels burnt in domestic combustion.
2. **Communications on burning** – this package focuses on educating consumers on the risks of domestic burning and how to burn in the cleanest way possible.
3. **Cleaner stoves** - these policies and measures could support the shift towards cleaner stoves in the household, thus improving indoor and outdoor air quality.
4. **Agriculture** - this package could reduce ammonia emissions from agriculture, which is the largest contributor to the UK's NH₃ emissions.
5. **Industry** – the industry package sets out how industry and regulators will work together to raise standards and reduce emissions.
6. **Road transport (decarbonisation)** – this package takes into account various road transport policies, set out in the Net Zero Strategy, which have an impact on air quality.
7. **Net Zero (Power, Industry and Residential)** - policies and proposals for decarbonising all sectors of the UK economy also have an impact on air quality and have been taken into account in compiling the NAPCP.

The policies and measures currently adopted and included in the emissions inventory and those that will be considered further as set out in the NAPCP could reduce emissions in accordance with the 2030 ERCs for all pollutants in the upper scenario and for all pollutants except PM_{2.5} and NH₃ in the lower scenario.

In the NAPCP all NH₃ projections and estimates are based on the projections published alongside this consultation. As such no account has been taken of the impact of the proposed adjustment to take account of improvements to the methodology for calculating emissions from non-manure digestates which has been submitted to the CLRTAP for scrutiny. If this adjustment were applied to the 2030 emissions, it would further reduce the risk of the UK exceeding the 2030 ERC for NH₃.

The government has considered additional policies and measures in relation to agriculture that could further help to further reduce the risk of the UK missing its 2030 ERC for NH₃. This includes requiring all urea to be protected or treated with urease inhibitors. These measures have not been selected for further consideration at this time.

In regard to reducing emissions from solid urea fertilisers the government outlined its approach in its response to the consultation published in March 2022. Should the approach outlined not achieve sufficient ammonia emissions reductions and the global supply and pricing of fertilisers be more stable, government will consult on draft regulations which are likely to require all urea fertilisers to be protected or treated with urease inhibitors from 2025/26.

The government has also considered additional policies and measures in relation to restrictions on domestic burning. These will not be considered further at this time. The packages of policies and measures selected for further consideration appear to have sufficient potential to reduce emissions in accordance with the 2030 ERCs. In addition, the government recognises that some households – particularly in rural areas - are reliant on solid fuel burning as a primary source for heating, hot water and cooking. This is particularly pertinent in light of the current focus on energy security, and the global rise in energy prices.

1.4 UK NAPCP additional factors

Additional policies not accounted for – likely to provide additional abatement

There are a number of additional policies in the pipeline, particularly for industry, which are likely to provide additional abatement. Due to the regulator-led process for setting Best Available Techniques (BAT), it is not possible for the NAPCP to identify in advance the specific technologies BAT will deliver by 2030 and therefore we have estimated abatement using historical data. Additionally, there are further policies being developed for smaller industrial sources (for example medium combustion plants) which we have not been able to quantify at this time for inclusion in the draft NAPCP but will provide additional abatement.

Ammonia (NH₃) adjustment - to take account of improvements to the methodology

In the draft NAPCP all NH₃ projections and estimates are based on the projections published alongside this consultation. However, as provided for by [regulation 4](#) of the NECR, the UK has prepared an adjusted inventory in relation to NH₃ emissions. The basis

of that adjustment is that account should be taken of new science and new sources of ammonia emissions, in particular the spreading of non-manure digestate, which was not included in inventory reporting at the time the ERCs were agreed and has increased in recent years. The UK has submitted its adjusted inventory for independent and expert scrutiny by UNECE experts who will review the inventory by September 2022.

Applying the adjustment to the 2020 inventory would reduce NH₃ emissions by 12.75kt in 2020. Based on the proportions of non-manure digestate in the 2020 NAEI, we estimate that roughly 21kt of our projected 2030 ammonia emissions relate to this source. If this adjustment were to be applied to our current projections for 2030, we would therefore expect a reduction to our 2030 compliance total of around 21kt, which would therefore reduce the risk of the UK exceeding the 2030 ERC for NH₃ in both lower and upper scenarios. Details of the adjustment application can be found in the 'Adjustments' chapter of the [Informative Inventory Report](#). A view from UNECE is expected by September 2022.

Uncertainties in emissions projections

Emissions projections are calculated in accordance with international guidelines, as accurately as possible. Despite following best practice and applying the highest analytical rigour possible, the projections will always contain some uncertainty, and should therefore be interpreted with this in mind. Uncertainties associated with emission projections arise from two factors:

i) The uncertainty within the base year (the starting point - typically the most current year of the historical inventory). Uncertainty in all emission estimates comes from uncertainty in both the underlying activities and emission factors used to generate the figures. As the key sources for each pollutant differ, the uncertainty varies accordingly. Further discussion of the uncertainties in the NAEI can be found in the Informative Inventory Report, available at: [UK Informative Inventory Report](#).

ii) the 'drivers' of future change (the projected data that is used to scale the base year emissions data). As a result, emission projections are always higher in uncertainty than historical emission estimates and that uncertainty increases the further into the future you go. Furthermore, there are currently several economic and geopolitical factors which make estimating projections particularly challenging and high in uncertainty:

- The UK's economy is recovering from the impacts of the COVID-19 pandemic, and therefore the available economic indicators from recent years are not necessarily good indicators of future growth. There was substantial behavioural change during the pandemic, and it is not clear whether some of these changes will result in long-term change. For example, whilst many people are returning to work in offices it is highly likely that there will be a permanent increase in working from home compared to pre-pandemic levels. This is expected to result in lower transport emissions due to reduced commuting, but possibly increased emissions from residential heating. The extent to which there will be long-term change and the impact on emissions, is not yet clear.
- The recent Russian invasion of Ukraine has had a significant impact on global fuel and fertiliser availability and prices. This is expected to drive substantial change in national

use patterns across many sectors in European countries, including the UK. As this is a new and emerging impact, it is difficult to estimate how fuel and fertiliser use in future years might be affected, and what knock-on effects this might have.

- The UK has a legally binding target to reach net zero emissions by 2050. Policy interventions which are expected to have large impacts on greenhouse gas emissions also influence air quality pollutant emissions. Examples include ending the sale of cars and vans with petrol and diesel engines, increased use of heat pumps in residential heating systems, and the growth of hydrogen as a fuel source across many sectors.

Impact of net zero

As climate change and air pollution have many of the same contributing emission sources, the decarbonisation of the UK economy offers major opportunities to significantly reduce air pollution and therefore improve human health and reduce the impact of some air pollutants on ecosystems. This is primarily driven through the reduction of petrol and diesel vehicles towards green alternatives, as well as the continual shift away from fossil fuels in heat and power generation. However, some technology choices could result in negative air quality impacts. Defra is working with other government departments to ensure that the co-benefits of actions to achieve Net Zero and improved air quality are maximised and that any potential negative impacts are carefully managed.

The estimated impact of the decarbonisation of the UK economy is based on possible pathways to reach Net Zero in 2050 as specified in the Net Zero Strategy ([net-zero-strategy-beis.pdf \(publishing.service.gov.uk\)](#)). However, there is uncertainty associated with the estimates made. The main sources of uncertainty include: uncertainties associated with data and assumptions (activity and trend in air pollution emission factors); changes in the wider environment; and unexpected events or risks that may influence the outcome. The uncertainty is the highest for particulate matter (PM).

Research and development

To reduce uncertainty, we are investing in a National Atmospheric Emissions Inventory improvement programme and have several research projects underway. These will update and improve our emission factors and reduce the uncertainty. There is a current focus on domestic combustion where we are investing over £1million in several projects to better represent current and future domestic combustion emissions from across the UK.

In addition, we have committed to invest over £2million to explore new and novel abatement technologies with the support of Innovate UK and wider industry, with the aim of reducing PM_{2.5} emissions from residential combustion and ammonia emissions from farming practices including anaerobic digestion.

We have also commissioned research aimed at understanding better the measurement techniques, material properties and control parameters of non-exhaust emissions from road vehicles.

2. Aim of the consultation

This consultation seeks views on the revised draft NAPCP. We will use the responses to this consultation to help inform the reviewed NAPCP due to be published in September 2022.

The consultation sets out 14 questions: general questions (1 to 5), policy related questions (6 to 11) followed by technical related questions (12 to 14). The policy questions relate to the balance of measures across the 7 packages which will be considered further in the NAPCP, and an additional question relates to the development of further measures the UK government or the devolved administrations could incorporate in the future to help to achieve the UK ERC most effectively. The technical questions relate to the scale of the potential emission reductions for each of the 7 packages as well as the opportunity to provide feedback on the uncertainties and effectiveness of the NAPCP.

3. General information and how to respond

Responding to this consultation

This consultation starts on 25 July 2022 and closes on 4 September 2022. We encourage responses via an online survey on Citizen Space, an online consultation tool.

Consultations receive a high level of interest across many sectors and using the online tool assists our analysis of responses, enabling more efficient and effective consideration of issues. However, responses can be sent by email or post. In your response please state:

- your name
- your email address
- your organisation (if applicable)
- whether you would like your response to be confidential (if yes, please state your reasons)

Enquiries and responses should be directed:

- by email to AQconsultations@defra.gov.uk including whether you need a hard copy of the consultation
- in writing to the Consultation Coordinator, Defra, 2nd Floor, Foss House, Kings Pool, 1-2 Peasholme Green, York, YO1 7PX

When considering responses to this consultation, the government will give greater weight to responses that are based on argument and evidence, rather than simple expressions of support or opposition.

Confidentiality and data protection information

A summary of responses to this consultation will be published on the government website at: www.gov.uk/defra. An annex to the consultation summary will list all organisations that responded but will not include personal names, addresses or other contact details.

Defra may publish the content of your response to this consultation to make it available to the public without your personal name and private contact details (home address and email address).

If you click on 'Yes' in response to the question asking if you would like anything in your response to be kept confidential, you are asked to state clearly what information you would like to be kept as confidential and explain your reasons for confidentiality. The reason for this is that information in responses to this consultation may be subject to release to the public or other parties in accordance with the access to information law (these are primarily the Environmental Information Regulations 2004 (EIRs), the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 2018 (DPA)). We have obligations, mainly under the EIRs, FOIA and DPA, to disclose information to particular recipients or to the public in certain circumstances. In view of this, your explanation of your reasons for requesting confidentiality for all or part of your response would help us balance these obligations for disclosure against any obligation of confidentiality. If we receive a request for the information that you have provided in your response to this consultation, we will take full account of your reasons for requesting confidentiality of your response, but we cannot guarantee that confidentiality can be maintained in all circumstances.

If you click on 'No' in response to the question asking if you would like anything in your response to be kept confidential, we will be able to release the content of your response to the public, but we won't make your personal name and private contact details publicly available.

There may be occasions when Defra will share the information you provide in response to the consultation, including any personal data with external analysts. This is for the purposes of consultation response analysis and provision of a report of the summary of responses only.

This consultation is being conducted in line with the Cabinet Office 'Consultation Principles' and be found at: <https://www.gov.uk/government/publications/consultation-principles-guidance>.

Please find our latest privacy notice uploaded as a related document alongside our consultation document.

If you have any comments or complaints about the consultation process, please address them to:

National Air Pollution Control Programme
Consultation Coordinator, Defra
2nd Floor, Foss House, Kings Pool,
1-2 Peasholme Green, York, YO1 7PX
Or email: consultation.coordinator@defra.gov.uk

4. Consultation questions

4.1 General questions

1. Would you like your response to be confidential?

- Yes
- No

If you answered Yes to this question, please give your reason.

2. What is your name?

3. What is your email address?

4. What is your location?

- England
- Scotland
- Wales
- Northern Ireland
- Other – please specify

5. Which of the below best describes you?

- Academic
- Individual
- Industry body
- Local authority
- NGO
- Consultancy
- Other – please specify

4.2 Policy related questions

6. Do you agree or disagree with the balance of measures across the 7 NAPCP packages as set out in section 2.6.1 of the NAPCP document, for the abatement of fine Particulate Matter (PM_{2.5})?

- Agree
- Disagree
- Neither agree or disagree
- Don't know

7. Do you agree or disagree with the balance of measures across the 7 NAPCP packages as set out in section 2.6.1 of the NAPCP document, for the abatement of Ammonia (NH₃)?

- Agree
- Disagree
- Neither agree or disagree
- Don't know

8. Do you agree or disagree with the balance of measures across the 7 NAPCP packages as set out in section 2.6.1 of the NAPCP document, for the abatement of Nitrogen Oxides (NO_x)?

- Agree
- Disagree
- Neither agree or disagree
- Don't know

9. Do you agree or disagree with the balance of measures across the 7 NAPCP packages as set out in section 2.6.1 of the NAPCP document, for the abatement of Non-Methane Volatile Organic Compounds NMVOCs?

- Agree
- Disagree
- Neither agree or disagree
- Don't know

10. Do you agree or disagree with the balance of measures across the 7 NAPCP packages as set out in section 2.6.1 of the NAPCP document, for the abatement of Sulphur Dioxide (SO₂)?

- Agree
- Disagree
- Neither agree or disagree
- Don't know

11. After the publication of this NAPCP, UK government and devolved administrations will continue to develop our policy measures and approaches. Please inform us of any further measures you think we should consider to help achieve the UK ERCs most effectively.

Proposals should be evidence based. Please select a country from the list below to which your measure(s) relate to and use the text box and file upload button to describe the proposed measure and supporting evidence.

- England
- Northern Ireland
- Scotland
- Wales
- UK wide

4.3 Technical related questions

12. Do you agree or disagree with the scale of the potential emission reductions for each of the 7 packages of PaMs as set out in table 2.6.1 of the draft NAPCP?

- Agree
- Disagree (too low)
- Disagree (too high)
- Neither agree or disagree
- Don't know

If you answer disagree (you feel the scale is either too low or high) please provide views and information to support your view.

13. We have outlined the uncertainty of projections in the 'UK NAPCP additional factors' above. Please provide any additional information on potential changes over the next 8 years which may impact emission projections. Please also select the category that your information relates to.

- Economic
- Environmental
- Policy
- Technical/Scientific
- Other (please specify)

14. In revising the NAPCP the UK has followed the format set out in EU implementing decision 2018/1522. Do agree or disagree that the format of the NAPCP could be improved?

- Agree
- Disagree
- Neither agree or disagree
- Don't know

If you answer agree and think the format could be improved, please provide views on how the NAPCP can be improved. This can be either presentational (the format or content required), or effectiveness/usefulness of the document. If you disagree and don't think the format of the NAPCP could be improved, please provide your views on the content and/or effectiveness/usefulness of the current format.

At the end of the consultation

When this consultation ends, we will keep copies securely. Members of the public may ask for a copy of responses under freedom of information legislation.

If you do not want your response - including your name, contact details and any other personal information – to be publicly available, please say so clearly in writing when you send your response to the consultation. Please note, if your computer automatically includes a confidentiality disclaimer, that won't count as a confidentiality request.

Please explain why you need to keep details confidential. We will take your reasons into account if someone asks for this information under freedom of information legislation. But, because of the law, we cannot promise that we will always be able to keep those details confidential.

We will summarise all responses and place this summary on our website at www.gov.uk/defra. This summary will include a list of names of organisations that responded but not people's personal names, addresses or other contact details.

Please give us 24 hours' notice if you wish to see consultation responses and summaries. There is a charge for photocopying and postage.

If you have any comments or complaints about the consultation process, please address them to: Defra Consultation Co-ordinator, Area 1C Nobel House 17 Smith Square London SW1P 3JR or email: consultation.coordinator@defra.gov.uk

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