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Policy paper

Clean Air Strategy 2019: executive summary

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Contents

Chapter 1: Understanding the problem
Chapter 2: Protecting the nation's health
Chapter 3: Protecting the environment
Chapter 4: Securing clean growth and innovation
Chapter 5: Action to reduce emissions from transport
Chapter 6: Action to reduce emissions at home
Chapter 7: Action to reduce emissions from farming
Chapter 8: Action to reduce emissions from industry
Chapter 9: Leadership at all levels
Chapter 10: Progress towards our goals

This Clean Air Strategy shows how we will tackle all sources of air pollution, making our air healthier to breathe, protecting nature and boosting the economy.

This document builds on an extensive consultation process which indicated broad-based support for many of the actions we are proposing. There was also a range of constructive feedback and challenge that has enabled us to improve and extend our ambition even further in certain key areas. A document summarising the responses to the consultation is published alongside the strategy.

The final strategy sets out these proposals in detail and also indicates how devolved administrations intend to make their share of emissions reductions. It complements three other UK government strategies, the:

- Industrial Strategy
- Clean Growth Strategy
- 25 Year Environment Plan

Since the middle of the 20th century we have addressed many of the worst impacts of air pollution through regulatory frameworks, investment by industry in cleaner processes and a shift in the fuel mix towards cleaner forms of energy. However, exposure to the pollution still present in our atmosphere is one the UK's biggest public health challenges, shortening lifespans and damaging quality of life for many people. It also harms the natural environment, affecting our waterways, biodiversity and crop yields.

Clean air is essential for life, health, the environment and the economy. Government must act to tackle air pollution which shortens lives. We have already acted to reduce concentrations of nitrogen dioxide (NO2) around roads from cars. But vehicles are not the only source of harmful emissions. Air pollution is a result of the way we currently generate power, heat our homes, produce food, manufacture consumer goods and power transport. Better, cleaner technologies and simple changes in behaviour will tackle the pollution that claims lives.

In the past, the priority was to tackle the biggest individual sources of pollution. As these major sources of emissions have decreased, the relative contribution of smaller and more diffuse sources of air pollution, like smaller industrial sites, product use, open fires in homes and spreading manure on farms, has increased. That requires new action.

We have already adopted ambitious, legally-binding international targets to reduce emissions of five of the most damaging air pollutants (fine particulate matter, ammonia, nitrogen oxides, sulphur dioxide, non-methane volatile organic compounds) by 2020 and 2030. We are now also proposing tough new goals to cut public exposure to particulate matter pollution, as recommended by the World Health Organization.

This strategy sets out the comprehensive action that is required from across all parts of government and society to meet these goals. New legislation will create a stronger and more coherent framework for action to tackle air pollution. This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem. These will support the creation of Clean Air Zones to lower emissions from all sources of air pollution, backed up with clear enforcement mechanisms.

Chapter 1: Understanding the problem

Air pollution comes from many sources. Pollutants can travel long distances and combine with each other to create different pollutants. Emissions from distant and local sources can build up into high local concentrations of pollution. The UK has set stringent targets to cut emissions by 2020 and 2030. The goal is to reduce the harm to human health from air pollution by half. A robust evidence base, backed by the most up to date science is essential to help us achieve this.

We are investing £10 million in improving our modelling, data and analytical tools to give a more precise picture of current air quality and the impact of policies on it in future.

We will increase transparency by bringing local and national monitoring data together into a single accessible portal for information on air quality monitoring and modelling, catalysing public engagement through citizen science.

Chapter 2: Protecting the nation's health

Air quality is the largest environmental health risk in the UK. It shortens lives and contributes to chronic illness. Health can be affected both by short-term, high-pollution episodes and by long-term exposure to lower levels of pollution. There are small things we can all do that will make a big difference to emissions locally and nationally. Effective communication of health messages about air pollution and appropriate action can save lives and improve quality of life for many.

We will progressively cut public exposure to particulate matter pollution as suggested by the World Health Organization. We will set a new, ambitious, long-term target to reduce people's exposure to PM2.5 and will publish evidence early in 2019 to examine what action would be needed to meet the WHO annual mean guideline limit of 10 µg/m3.

By implementing the policies in this strategy, we will reduce PM2.5 concentrations across the UK, so that the number of people living in locations above the WHO guideline level of 10 µg/m3 is reduced by 50% by 2025.

By taking action on air pollution we can help people live well for longer, as set out in the Department of Health and Social Care's recently published 'Prevention is Better than Cure' document, which sets the scene for the development of a prevention green paper.

We will:

- provide a personal air quality messaging system to inform the public, particularly those who are vulnerable to air pollution, about the air quality forecast, providing clearer information on air pollution episodes and accessible health advice
- back these goals up with powers designed to enable targeted local action in areas with an air pollution problem
- work with media outlets to improve public access to the air quality forecast
- work to improve air quality by helping individuals and organisations understand how they could reduce their contribution to air pollution, showing how this can help them protect their families, colleagues and neighbours

We have published updated appraisal tools and accompanying guidance to enable the health impacts of air pollution to be considered in every relevant policy decision that is made.

We will equip health professionals to play a stronger role by working with the Medical Royal Colleges and the General Medical Council to embed air quality into the health professions' education and training. We will work with local authorities and directors of public health to equip and enable them to lead and inform local decision-making to improve air quality more effectively.

Chapter 3: Protecting the environment

This strategy is a key part of delivering our 25 Year Environment Plan. Air pollution has direct impacts on the natural environment, contributing to climate change, reducing crop yields and polluting oceans. Cleaner air will directly benefit animals and habitats as well as creating a better environment for everyone to live, work and thrive in.

We will:

- commit to a new target for the reduction of damaging deposition of reactive forms of nitrogen and review what longer term targets should be to further tackle the environmental impacts of air pollution
- monitor the impacts of air pollution on natural habitats and report annually so that we can chart progress as we reduce the harm air pollution does to the environment
- provide guidance for local authorities explaining how cumulative impacts of nitrogen deposition on natural habitats should be mitigated and assessed through the planning system

Chapter 4: Securing clean growth and innovation

This strategy contributes to the government's action on clean growth. Action to clean up the air will boost productivity and economic growth. We will make the UK a world leader in the development, use and export of goods and services focused on tackling air pollution.

We will maximise the advantages for UK industry from the global shift to clean growth – through leading the world in the development, manufacture and use of technologies, systems and services that tackle air pollution.

In partnership with UKRI, we will seek ways to support further investment in Clean Air innovation. For example, we have launched a joint research programme worth £19.6 million to promote the development of cleaner technologies and as part of this Innovate UK have run a £5 million Small Business Funding competition to promote and procure industry-led research and development.

Future electricity, heat and industrial policies will together improve air quality and tackle climate change. Phasing out coal-fired power stations, improving energy efficiency, and shifting to cleaner power sources will reduce emissions of air pollution as well as carbon dioxide. As we phase out oil and coal heating, we will ensure this transition improves air quality wherever possible and cost effective to do so.

Building on the framework established for bioenergy, we will seek to strengthen the collaboration between Defra and BEIS, so that we fairly and objectively articulate the trade-offs between energy and public health when developing strategies to meet air quality and carbon targets.

We will minimise the air quality impacts of the Renewable Heat Incentive Scheme and tackle non-compliance. For example, we have introduced new rules requiring all applicants to submit relevant permits and exemptions to evidence their compliance with all local and national environmental regulations, including air quality impacts. The government recently consulted on banning new RHI biomass applications installed in urban areas which are on the gas grid and introducing mandatory maintenance checks for those installations already accredited on the RHI and will be responding in due course.

We will consult on making coal to biomass conversions ineligible for future allocation rounds of the contracts for difference scheme.

Chapter 5: Action to reduce emissions from transport

Transport is a significant source of emissions of air pollution. The immediate air quality challenge is to reduce emissions of nitrogen oxides in the areas where concentrations of these harmful gases currently exceed legal limits. The government has already committed more than £3.5 billion to tackle poor air quality through cleaner road transport and is working closely with local authorities and Local Economic Partnerships to make progress. Alongside this, the government is committed to cutting air pollution from all forms of transport.

We published Road to Zero, which sets our plans to end the sale of new conventional petrol and diesel cars and vans by 2040. We will position the UK as the best place in the world to develop, manufacture and use zero exhaust emissions vehicles and, during the transition, we will ensure that the cleanest conventional vehicles are driven on our roads.

In December we published a consultation on our strategy for the future of the UK Aviation sector, Aviation 2050. Our strategy shaping up the future of the maritime sector, Maritime 2050, will also be published soon, informed by a call for evidence held in March 2018.

New legislation will enable the Transport Secretary to compel manufacturers to recall vehicles and non-road mobile machinery for any failures in their emissions control system, and to take effective action against tampering with vehicle emissions control systems.

We will work with international partners to research and develop new standards for tyres and brakes to enable us to address toxic non-exhaust particulate emissions from vehicles which include micro plastics and can pollute air and water.

We will reduce emissions from rail and reduce passenger and worker exposure to air pollution. By the spring 2019, the rail industry will produce recommendations and a route map to phase out diesel-only trains by 2040.

By spring 2019, the government will publish guidelines to advise ports on how to develop effective and targeted Air Quality Strategies. The strategies will set out plans to reduce emissions across the ports and associated waterways, including both emissions from shore activities and visiting ships. Some ports like Southampton and London have already developed a strategy and are making progress. Following publication of the guidelines, ports within scope will be required to produce Air Quality Strategies by the end of 2019.

We have reviewed the policy on aviation-related emissions to improve air quality and have published the consultation on a new aviation strategy.

We are taking action to encourage the use of the cleanest modes of transport for freight and passengers, including active travel.

We are working with the Treasury to review current uses of red diesel and ensure its lower cost is not discouraging the transition to cleaner alternatives.

We will explore permitting approaches to reduce emissions from non-road mobile machinery, particularly in urban areas.

Chapter 6: Action to reduce emissions at home

Many people are unaware that emissions in the home increase personal exposure to pollutants and contribute significantly to our overall national emissions. Burning wood and coal in open fires and stoves makes up 38% of the UK's primary emissions of fine particulate matter[1] (PM2.5). Harmful sulphur dioxide (SO2) is emitted by coal burned in open fires. Non-methane volatile organic compounds (NMVOCs) from a wide variety of chemicals that are found in carpets, upholstery, paint, cleaning, fragrance, and personal care products are another significant source of pollution.

We will:

- legislate to prohibit the sale of the most polluting fuels
- ensure that only the cleanest stoves are available for sale by 2022
- make changes to existing smoke control legislation to make it easier to enforce
- give new powers to local authorities to take action in areas of high pollution
- work across government to look at opportunities to align our work on air quality, clean growth and fuel poverty in future policy design
- develop a dedicated communication campaign targeted at domestic burners, to improve awareness of the environmental and public health impacts of burning
- work with industry to identify an appropriate test standard for new solid fuels entering the market
- work with consumer groups, health organisations and industry to improve awareness of NMVOC build-up in the home, and the importance of effective ventilation to reduce exposure
- work with consumer groups, health organisations, industry and retailers to better inform consumers about the VOC content of everyday products
- explore a range of options including the development of a voluntary labelling scheme for NMVOC containing products, and assess its potential effectiveness
- work with consumer groups, health organisations, industry and retailers to promote development of lower VOC-content products and to reduce emissions from this sector.

Alongside our actions on emissions of NMVOCs, we will consult on changes to Building Regulations standards for ventilation in homes and other buildings, to help reduce the harmful build-up of indoor air pollutants.

Chapter 7: Action to reduce emissions from farming

The agriculture sector accounts for 88%[2] of UK emissions of ammonia, which is emitted during storage and spreading of manures and slurries and from the application of inorganic fertilisers. Ammonia damages sensitive natural habitats and contributes to particulate pollution in urban areas. Action by farmers can make a big difference to ammonia emissions. The government is already acting to help farmers by funding the necessary equipment.

We have provided a national code of good agricultural practice (COGAP) to reduce ammonia emissions.

We will require and support farmers to make investments in the farm infrastructure and equipment that will reduce emissions.

A future environmental land management system will fund targeted action to protect habitats impacted by ammonia.

We will:

- continue to work with the agriculture sector to ensure the ammonia inventory reflects existing farming practice and the latest evidence on emissions
- regulate to reduce ammonia emissions from farming by requiring adoption of low emissions farming techniques
- extend environmental permitting to the dairy and intensive beef sectors
- regulate to minimise pollution from fertiliser use, seeking advice from an expert group on the optimal policy approach

Chapter 8: Action to reduce emissions from industry

Industrial processes, including energy generation to power our businesses and homes and the manufacture of goods and food, can all create pollution. For many decades, the UK has been at the forefront of reducing industrial pollution, and significant progress has already been made. We will continue to build on that progress by increasing standards to reflect international best practice.

We will maintain our longstanding policy of continuous improvement in relation to industrial emissions, building on existing good practice to deliver a stable and predictable regulatory environment for business as part of a world-leading clean green economy. This includes ensuring that there is a clear process for determining future UK Best Available Techniques for industrial emissions.

We will continue to work with industrial sectors to develop a series of ambitious sector roadmaps to make UK industry world leaders in clean technology and to secure further emissions reductions.

We will consider closing the regulatory gap between the current Ecodesign and medium combustion plant regulations to tackle emissions from plants in the 500kW to 1MW thermal input range. As legislation on medium combustion plants and generators comes into force, we will consider the case for tighter emissions standards on this source of emissions.

Chapter 9: Leadership at all levels

Emissions from abroad, across the UK and local sources all contribute to the pollution that people and the environment are exposed to. Effective action is needed at all levels to clean up our air. This strategy sets out our commitment to cut our national emissions to reduce population exposure. As part of this we will make it easier to take action at local level. Alongside this, the UK will continue to play an active, leading role in international action to improve air quality.

We recently published draft clauses that set out how we will create a pioneering new system of green governance, establishing an Office for Environmental Protection, to ensure we succeed in leaving the environment in a better condition than we found it. The draft clauses also introduce a set of environmental principles that will be used to guide future government policy making and lead us toward a greener future; and place our 25 year environment plan on a statutory footing.

We will bring forward provisions on air quality in 2019. This will include an up to date legislative framework for tackling air pollution at national and local level, tying this into the development of the new environmental principles and governance framework to be outlined in the Environment Bill.

To drive and enable greater local action on air pollution, we will ensure responsibility sits at the right tier of local government and back this up with new powers as well as making existing powers easier to use. Neighbouring local authorities and other public bodies will work collectively to tackle air pollution.

Our international air quality commitments have been agreed at a UK level. However, air quality is a substantially devolved policy area. Scotland has already produced its own Air Quality Strategy, and Wales and Northern Ireland are currently in the process of drafting their own (further details of these are set out in Chapter 9).

The UK government will work in partnership with the governments of Scotland, Wales and Northern Ireland to develop a National Air Pollution Control Programme as required under the National Emissions Ceilings Directive for publication in 2019.

Chapter 10: Progress towards our goals

Analysis shows that the actions set out in this strategy can meet our ambitious emissions reduction targets, if they are implemented with the necessary pace and determination.

1. Defra analysis of 2016 PM2.5 emissions from the National Atmospheric Emissions Inventory (NAEI) 2018, http://naei.beis.gov.uk/ ↩
2. Defra, 'Emissions of air pollutants in the UK, 1970 to 2016' (2018), https://www.gov.uk/government/statistics/emissions-of-air-pollutants ↩

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