

Improving Air Quality After Brexit





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Foreword



Immediately after the Brexit referendum, there was a general concern that leaving the EU would herald a dilution of environmental standards, given how many of our green laws derive from EU Directives and regulations. While that concern has not entirely gone away, and the environmental movement must not be complacent, the focus has moved in recent months to a subtly different concern around environmental governance, or, in plain terms, how can we ensure that the bundle of environmental laws on the statute book post-Brexit are operated in a coherent and progressive manner? For example, how they will be kept up to date as the science evolves? How will the Government be held to account against the targets it sets itself?

Solving this challenge should be a concern for all of us as citizens, but is also important for the environmental businesses which EIC represents. Britain has a vibrant environmental business sector full of innovation, but to invest, grow, and deliver the environmental improvements we all want to see, these firms need confidence that environmental regulations will not stagnate or be changed on a political whim.

This report is one of a series which EIC is publishing as a contribution to the debate on environmental policy post-Brexit. Co-written with EIC member firm Aether, an environmental consultancy, it looks at air quality policy specifically. Given the public health impact of air pollution, and the role that Supreme Court judgements against the Government have played in galvanising Ministerial action, ensuring we have a world-class policy framework in this area is especially important.

The report covers both key elements of the current framework which must be retained, but also considers how we can draw on best practice around the world and develop a framework that matches the situation the UK faces. While there is continuing uncertainty over the type of post-2019 relationship with the EU Britain will have, and whether there will be a transition period, the clearer we are in terms of how we want environmental policy to work going forward, the better prepared we will be for any eventuality. We hope the report will stimulate debate, and be of value to our politicians and policy makers as our departure from the EU gets ever closer.

I would like to thank Tim Williamson and Mark Gibbs at Aether for their work on this project – without their expertise this report would not have been possible. I am also grateful to all the members of the EIC's Air Quality Working Group who have provided input.

Matthew Farrow
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Executive Summary

Poor air quality is recognised nationally and internationally as a significant risk to public health¹ and the environment. Air quality policy in the UK is shaped by an extensive and complex framework of legislation originating in both the UK and from European Law. Significant progress has been made in reducing air pollution over the decades but air pollution still imposes a significant health burden on the UK population and we are failing to meet our legal obligations to meet air quality Limit Values for nitrogen dioxide in many urban areas.

Through the legislative changes required in the implementation of Brexit, the UK Government now has **opportunities to significantly improve the regulation of air quality**, reduce the public health burden it imposes and increase business confidence, stimulating the green economy. The extent to which the UK will continue to be influenced by EU legislation and enforcement systems, such as the European Court of Justice (ECJ), remains to be seen. This will profoundly impact the way in which air quality is addressed in the UK, as for most other environmental areas.

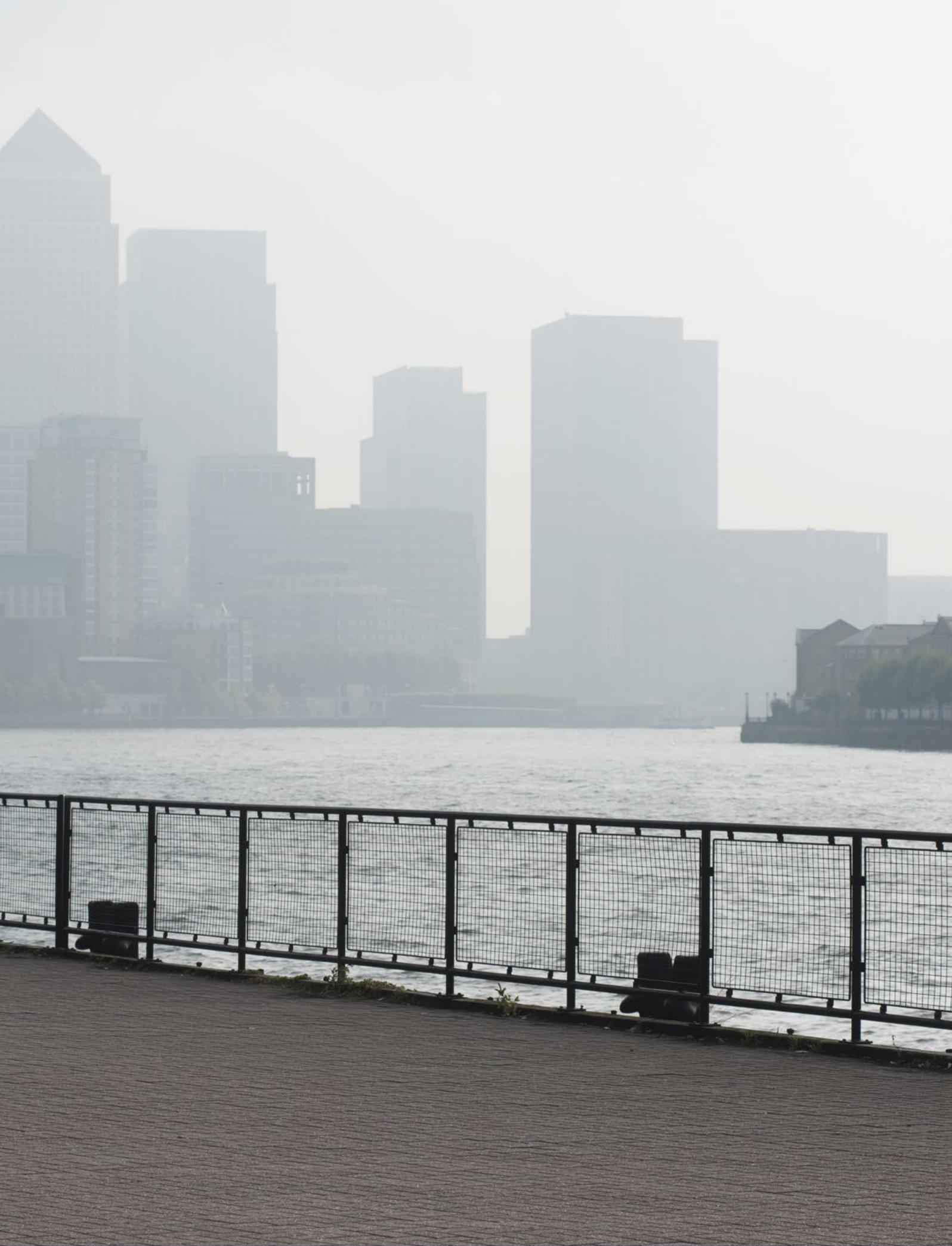
An overriding question is how to replace the role of the European Commission and ECJ in tracking progress towards targets and enforcing legal obligations on air quality. We propose that a statutory **Committee on Air Quality**, modelled on the Committee on Climate Change, could take up some of this role, publicly and independently tracking progress and helping to hold the Government to account. This will require a **new Clean Air Act** which, as well as setting up the Committee, could bring together and update the currently disparate parts of the air quality legislative framework, increasing transparency and clarity of purpose. This is the opportunity for the Government to re-state its intention to uphold the highest standards of public protection.

A new Clean Air Act also offers the chance for the UK to take a lead in innovative air quality legislation, drawing on **policies and measures** from across the world. A bespoke system for the UK could adopt the principle of **continuous improvement** for pollutants, such as particulate matter, for which there are no safe thresholds². This would follow the Canadian Government's lead. A new approach could also draw on practices used in other countries and regions to provide clear, independent and meaningful **routes of redress** on environmental issues, such as through environmental courts.

Regardless of Brexit, the air quality in the UK will still be profoundly influenced by continental Europe, either through the movement of polluted air or the trade in potentially polluting products. Cooperation with other countries both in and outside the EU will remain essential to protecting UK public and environmental health from air pollution. We urge the Government to retain membership of the **European Environment Agency**, which does not require EU membership, and to continue cooperating in international fora such as the UNECE Convention on Long Range Transboundary Air Pollution.

In summary, the EIC view is that the UK Government needs to:

1. Create a statutory **Committee on Air Quality** to both track progress towards the achievement of good air quality across the UK and to hold the Government to account, with links to statutory air quality targets;
2. Maintain international cooperation, including **membership of the European Environment Agency**;
3. Learn from the policies and measures used across the world to address air pollution and adopt a **continuous improvement** approach to particulate matter (PM₁₀ and PM_{2.5}) and its precursors (NO₂, SO₂ and ammonia);
4. Give the above statutory force through a **new Clean Air Act**;
5. Establish clear, independent and meaningful **routes of redress** on environmental issues;
6. Through these actions help to **stimulate the green economy** for goods and services to reduce environmental impacts.



Why Brexit and air quality?

Brexit will change the way we manage air quality. If we are willing, it also provides the opportunity for us to consolidate and improve how we do it.

For air quality, as for all other environmental policy areas, current UK legislation is predominantly derived from EU directives and regulations which the UK has played a major role in shaping. Subject to the final form of the European Union (Withdrawal) Bill and the negotiated settlement between the EU and the UK, this body of legislation is expected to remain on the UK statute book after Exit Day. However, the UK's responsibilities in reporting to the European Union and its accountability to the Commission and European Court of Justice may cease. The UK could also be at liberty to develop its policy and legislation in a different way to that of the EU. We believe this offers an opportunity for the UK to develop new ideas, to streamline and focus its approach, and to regain the innovative position it has held in the past with regard to air quality policy. We strongly urge the UK Government to seize this opportunity.

This report examines the policy landscape as it currently stands, what will change after Brexit and the nature of the opportunity that it affords. By its very nature, such a report is a hostage to the developing nature of Brexit and the arrangements which are currently being negotiated between the UK Government and the European Union. Issues such as when or even whether the UK exits the Single Market are still uncertain and there are many levels of detail to go through before we can say with any certainty how Brexit will impact on UK air quality policy. In framing this report, we have attempted to remain neutral as to the final, "big picture" outcome and have sought to highlight the risks and opportunities this could represent, in the context of air quality. We conclude that six key steps are needed to build on what we have, improve policy development and delivery, and increase protection for the UK population from poor air quality whilst allowing for sustainable development of the economy.

One issue which is not dealt with in this report is devolution. European law is a UK issue, led by UK Government, whereas "the environment" is, in general, devolved. After Brexit, there is an increased likelihood of very different environmental policies being pursued in each of the four UK national regions. While this could raise significant issues in itself, and was acknowledged by Secretary of State for Defra Michael Gove in his evidence to the Environmental Audit Committee on 1 November 2017³, these are not analysed further in this report.

Nor does this paper analyse in detail the Government's most recent Air Quality Plan⁴, a plan drawn up to meet current EU obligations. In setting up a system of Clean Air Zones to help achieve the EU Air Quality Limit Values for NO₂, running alongside local Air Quality Management Areas to help achieve UK Air Quality Objectives – numerically the same but subtly different in assessment – the Plan emphasises the fractured nature of UK air quality policy. This paper sets out some of the ways in which such divisions could be removed.

How has air quality policy developed in the UK?

Concern about air pollution is hardly new and the roots of the UK's air quality and air pollution control legislation can be traced back several centuries. 1273 saw the first regulation against the burning of coal as being "prejudicial to health". In the 19th and 20th centuries, the UK was an innovator in this area, with the Alkali Act 1863 establishing a national system of pollution control Inspectors and the Clean Air Act 1956 marking the first serious attempt to improve urban air quality. In the 1990s, the UK preceded EU legislation, setting up a system of integrated pollution control for industrial installations under the Environmental Protection Act 1990. With the introduction of the Environment Act 1995, the UK set up a system of national targets for concentrations of a range of pollutants in ambient air, again arguably preceding EU legislation by several years. The 1995 Act also established the system of Local Air Quality Management (LAQM). It marked the last time the UK passed new primary legislation on air quality which did not originate from the EU.

The EU's role in developing a common environmental legislative framework for the whole of the Community started in 1973 with the adoption of the first Environmental Action Programme. The current iteration of the programme, the seventh, will take EU policy through to 2020, with a key aim of ensuring full implementation of the current body of legislation on the environment.

Two further elements have helped shape the UK's air quality policy and legislation: The United Nations (UN), in the guise of the UNECE⁵ and UN Environment⁶, and the national and international body of law and agreements on climate change. The UNECE Gothenburg Protocol⁷ has the highest profile. Agreed in 1999, it is the culmination of a series of protocols under the Convention on Long Range Transboundary Air Pollution (CLRTAP) aimed at addressing the damage pollution emitted in one country has on others. The Convention now also covers North America, Europe and parts of Asia. Within the EU, these Conventions and Protocols are given "hard law" status through EU Directives which, in common with all EU directives, contain mandatory requirements to transpose them into national legislation.

Taking these as a whole, UK air quality and air pollution policy (and legislation) acts in four key ways:

- National emissions control, to address transboundary effects on both human health and ecosystems;
- Local air quality management, to address the impact of poor air quality on human health;
- Industrial pollution control, as part of integrated pollution control; and
- Product standards and controls, including vehicle emission standards.

Legislation which imposes duties or restrictions on bodies or individuals requires some form of enforcement and air pollution legislation is no different. However, the strength and method of enforcement varies considerably. For UK law, there are some direct sanctions, such as operating a “potentially polluting” process without a permit or a breach of those permit conditions. Local authorities not complying with their duties can, in certain circumstances, be directed to do so by the relevant Secretary of State. There is no constitutional or environmental court in the UK, although the action or inaction of any public body, including the Government, can be subject to judicial review. The presiding judge can direct that body to undertake corrective action; failure to comply is regarded as contempt of court which can attract criminal sanctions and, potentially, damages.

At the local level, enforcement is usually undertaken by local authorities although they often lack the power or capacity to undertake enforcement action for air quality provisions. While not directly related to membership of the EU, changes in legislation following Brexit will need to take into account the ability of local authorities to enforce measures such as low emission zones.

At the EU level, there is a well-defined enforcement process, initiated by the European Commission and ending in the European Court of Justice, which has the power to impose a range of sanctions on Member State Governments, including substantial fines. Above the EU level, for example in relation to the CLRTAP, there is little by way of enforcement, compliance being mainly considered a reputational issue. The provisions of international conventions and treaties like the Gothenburg Protocol are legally binding on signatory Governments but it is not clear whether failure to comply could be challenged through judicial review.

What does Brexit change?

The current draft of the European Union (Withdrawal) Bill⁸ states that *“EU-derived domestic legislation, as it has effect in domestic law immediately before exit day, continues to have effect in domestic law on and after exit day”*. In other words, the EU-derived part of the UK’s suite of air quality legislation, for example the air quality limit values, will remain in place after Brexit. This is confirmed in the Department for Exiting the EU (DExEU) Factsheet No. 8: Environmental Protections⁹, which says that the Repeal Bill *“will convert the existing body of EU environmental law into UK law, making sure the same protections are in place in the UK and laws still function effectively after the UK leaves the EU”*. However, environmental principles, such as the precautionary principle which is written into the Lisbon Treaty, will not be carried over as things currently stand.

On 21 July 2017, Michael Gove, the Secretary of State for Defra, delivered a keynote speech on the environment¹⁰, saying that the EU has been a driver of environmental improvement and protection in many areas. However, he also said that *“outside the European Union, we can do much better”*. While this was said in the context of emissions testing for road vehicles, i.e. Dieselgate, it is worth examining where else we could upgrade air quality protections, accelerating improvement, linking more closely to health and environmental outcomes and making the whole structure more transparent and efficient.

One of the criticisms aimed at European Union environmental legislation is that, while it gives certainty and an equality of protection across the Union, it also tends to go at the pace of the slowest. In the past, that has sometimes meant the UK. The UK Government was slow to recognise the transboundary nature of acid rain in the 1980s and thus the need for international, cooperative action. However, the UK has now developed a reputation for its strong, evidence based approach and while the issues around NO₂ compliance are well publicised, the UK is certainly not alone in Europe in facing such problems. More recently, the UK has become a strong advocate for low and zero emission vehicles, often in the face of opposition from other Member States.

The European Union (Withdrawal) Bill, as it stands, allows the Government to make changes to primary legislation in order to correct “deficiencies” following Brexit. These deficiencies are defined in the Bill and relate mainly to amending references to EU institutions. However, it has been suggested by some observers that “transition period amendments” could go much further. Moreover, with the UK air quality legislation comprising a mixture of Acts, Regulations and obligations from different sources, there could be an opportunity for consolidation and simplification of the body of legislation as a whole, as well as improving transparency. There is also the crucial question of who takes on the mantles of the European Commission and European Court of Justice in holding the Government to account.

Annex 1 covers in more detail the complex patchwork that makes up UK air quality legislation, splitting it into three main sources:

- EU legislation which has been transposed into UK law;
- Acts and regulations which are UK-specific, often predating EU measures; and
- International treaties and obligations which go beyond the EU.

Where are the “deficiencies” in EU-derived legislation?

The European Union (Withdrawal) Bill as it stands will allow the Government to correct “deficiencies” in existing, EU-derived legislation using a simplified process after exit day. Deficiencies are defined in some detail in the Bill but essentially refer to parts of current statutes which have no practical application to the UK or which require some form of interaction with EU institutions, such as the European Commission. For air quality legislation, this has implications in five key areas:

- **Non-EU commitments:** The UK is a signatory to non-EU conventions and protocols, and the Repeal Bill states that these will continue after exit day. However, these requirements tend to be brought into UK law via EU legislation, as the UKELA has identified¹¹. For example, the Gothenburg protocol is enacted through the Reduction of National Emissions Directive;
- **International cooperation:** The UK has a great deal to gain, and to contribute, through international cooperation, particularly in strengthening its scientific evidence base. Maintaining membership of the European Environment Agency and continued active participation in the various CLRTAP working groups and task forces, for example, would be an important part of that effort without conferring any additional legal obligations;

- **Divergence:** While the body of EU legislation will be transferred into UK legislation by the European Union (Withdrawal) Bill, as it currently stands, this body will not remain static for long. For example, it is highly likely that the EU will develop new sets of air emission limits for non-road mobile machinery, such as construction machinery, as well as for road vehicles. While vehicles and equipment manufactured in the UK and exported to the EU will need to comply with relevant standards, will those standards also be applied to products for the domestic, UK market? This issue applies across a wide range of subjects (and, of course, far wider than just air quality), from product standards such as the “eco-design” standards to air quality limit values, and will become increasingly pressing over time. It is important to note that different product standards are effectively a non-tariff trade barrier. A key question is to what extent will the UK need to apply and enforce legislation which it had no part in developing and negotiating?
- **Reporting:** The Ambient Air Quality Directive, Reduction of National Emissions Directive and other directives require annual reporting of data to the European Commission and associated agencies, including analysis of current performance against mandatory standards. While the UK currently makes much of its air quality data available online, including the national emissions inventory and near real-time monitoring data, this is not enough to show whether levels are legally compliant with the UK’s obligations. The removal of reporting obligations would reduce transparency and the capacity to track UK progress from outside Government, although the current reporting frameworks tend to be highly technical and not necessarily accessible to non-experts;
- **Accountability:** The European Commission and European Court of Justice are currently the enforcing bodies for EU legislation and are able to hold national Governments to account for failing to meet their commitments and obligations. There is no obvious replacement for this at a national level in the UK other than through judicial review, which is lengthy, expensive and unpredictable. Judicial review is also restricting in the range of issues it can address and the remedies it can prescribe (see below).

Of these issues, the last two – reporting and accountability – are clearly the most pressing in the short term. However, the others will come to bear over the longer term. It could be argued that they are an extension of holding the Government to account, in this case on its commitment to ensure the highest standards of human and environmental health protection in the UK post-Brexit or, as Michael Gove put it in his July 2017 speech:

“When we speak as a Government of Global Britain it is not just as a leader in security or an advocate for freer trade that we should conceive of our global role but also a champion of sustainable development, an advocate for global social justice, a leader in environmental science, a setter of gold standards in protecting and growing natural capital, an innovator in clean, green, growth and an upholder of the moral imperative to hand over our planet to the next generation in a better condition than we inherited it.”



What are the opportunities for UK policy post-Brexit?

To further reduce the costs of poor air quality through an improved air quality policy framework unhindered by the constraints of EU legal processes.

To continue to show leadership in air pollution protection and develop and export environmental protection products and services.

As the National Air Quality Plan¹² notes, poor air quality is *“the largest environmental risk to public health in the UK”*. It goes on to note that *“in 2012, poor air quality had a total cost of up to £2.7 billion through its impact on productivity”*¹³; the social costs of poor air quality impacts on health have been valued at an order of magnitude higher. The rationale for intervention, the reason for Government policy development, on air quality remains strong.

Brexit offers an opportunity to improve the air quality policy framework in the UK, to drive faster improvement more efficiently and reconnect policy with the desired outcomes, i.e. improved public and environmental health protection. Here we suggest four key building blocks necessary for making this happen.

Tracking progress and enforcing standards

The UK has already shown leadership in one environmental policy area which can be drawn on for a partial solution for air quality. In passing the Climate Change Act 2008, the UK became the first country in the world to set a legal target for GHG emissions.

Brexit offers the UK the opportunity to draw from the best examples of these to create an accessible, independent, pragmatic and transparent route for redress on environmental law.

We strongly recommend that the Government set up a statutory Committee on Air Quality with functions mirroring those of the Committee on Climate Change. This could be done through a new **Clean Air Act**.

The question of how the enforcement role currently held by the European Commission and Court is replaced after Brexit has become one of the central issues for environmental policy. Unlike some other countries, the UK does not have a constitutional court i.e. a body whose purpose is to ensure the Government complies with its own laws. In the UK, the Government is generally held to account both by Parliament and through the system of judicial review, whereby anyone can put a case before the High Court if they feel that the Government is not meeting its own commitments or acting in some way unlawfully¹⁴. DExEU's Factsheet No. 8: Environmental Protections¹⁵ points to judicial review as central to *"a strong legal framework for enforcing environmental protections"* and that *"it is, and it will remain, the role of Parliament to hold the executive to account, and Parliament is ultimately accountable to the electorate"*.

However, it has been argued by the legal community that this falls short of providing sufficient scrutiny and accountability for the Government on its environmental commitments and obligations. The UK Bar Council has said that the Government should *"Ensure effective enforcement of environmental protection and standards through the creation of an effective, independent domestic enforcement mechanism, underpinned by judicial oversight and availability of sanctions for non-compliance"*¹⁶. Michael Gove, in his evidence to the Environmental Audit Committee on 1 November 2017 also called into question the suitability of judicial review as the principle form of redress, acknowledging the need for a "Commission like" body to hold the Government to account¹⁷. In its report *Brexit and Environmental Law*¹⁸, the UK Environmental Law Association (UKELA) highlights the shortcomings of judicial review as the sole mechanism for redress on the environment and provides an analysis of environmental Courts and Ombudsmen implemented and used successfully across the world. **Brexit offers the UK the opportunity to draw from the best examples of these to create an accessible, independent, pragmatic and transparent route for redress on environmental law.**

However, formal legal proceedings are only one element of holding the Government to account. As has been seen recently, repeatedly seeking intervention through the Courts is an inefficient way of raising complaints and resolving disputes, albeit the only formal one which exists currently. It is also subject to the priorities of environmental NGOs: if Client Earth had not taken legal proceedings against the Government over its plans to achieve compliance with NO₂ Limit Values, it is doubtful whether any other national environmental NGO would have done likewise.

The UK has already shown leadership in one environmental policy area which can be drawn on for a partial solution for air quality. In passing the Climate Change Act 2008, the UK became the first country in the world to introduce legally binding national legislation to tackle climate change. It also set up an innovative system of carbon budgets which would lay the path to achieving that target. As this was UK legislation, the European Commission had no part in providing oversight and so a separate system was needed. Part 2 of the Act set up the Committee on Climate Change to fulfil this function.

The role of the Committee is to advise the Government on the 2050 target and on carbon budgets, advice which must be published by the Government. It is required to assess the progress towards the target and report its findings to Parliament, which the Government is required to respond to, also by reporting to Parliament. While the membership of the Committee is appointed by the Government, it *"is not to be regarded as the servant or agent of the Crown"*¹⁹. It can undertake its own research, appoint staff and *"do anything that appears to it necessary or appropriate for the purpose of, or in connection with, the carrying out of its functions"*²⁰.

These functions strongly mirror those of the European Commission, up to the point at which infraction (legal) proceedings are initiated, albeit with greater transparency and accessibility built in. An independent, accessible annual report on progress towards achieving limit values or national emissions targets doesn't hold the Government to account in itself but it does help provide the basis for doing so. Undertaking this through a UK-based Committee rather than the European Commission means that we can move away from the highly technocratic reporting procedure used by the Commission towards something more meaningful. This is helpful not only for NGOs and the public but also for the Government itself, as the current reporting framework is not easy to understand and interpret, and so not suitable as a tool to communicate the action that is being taken on air quality.

We **strongly recommend that the Government set up a statutory Committee on Air Quality** with functions mirroring those of the Committee on Climate Change. This could be done through a **new Clean Air Act**.

Cooperation and coordination

The UK has also developed a leading role in providing expertise in managing air quality and controlling air pollution to the international community.

We urge the Government to retain membership of the European Environment Agency after exit day and to continue to play an active role in supporting the evidence and policy development roles of this and other international organisations such as CEN.

Air quality is not just a local issue. Air pollution can be transported long distances, crossing countries and even continents and having an effect a long way from its source. The UK's geographical position, at the north-west corner of Europe with prevailing winds largely coming off the Atlantic, means that we are a "net exporter" of air pollution, with UK emissions impacting on Scandinavia and Northern Europe. However, certain weather conditions mean that air pollution blows in from continental Europe. The highest levels of particulate pollution in London, for example, tend to be associated with air masses which have previously travelled across other European countries, such as Italy, Germany, France, Belgium and The Netherlands, carrying emissions from those countries to the UK²¹. Solving our air pollution problems therefore means coordinated action with all of our neighbours, to reduce our impacts on them and theirs on us.

A key feature of modern scientific research is its international nature. It is becoming increasingly rare for major research projects to be limited to single institutions and international cooperation has become the norm. While the European Union has played a strong role in encouraging such cooperation, the benefits of sharing resources and bringing the best expertise to bear on a problem, regardless of where that expertise resides, offer stronger drivers. The benefits of cooperation across boundaries is reflected in the evidence structures which support the development of EU policy and legislation on air quality.

As the UK exits the EU, it will become more important than ever that it retains access to the shared pool of knowledge and expertise. The European Environment Agency plays a leading role in gathering, analysing and reporting on environmental conditions across Europe, as well as on the policies and measures being put in place to address them. Switzerland, Norway and Turkey, for example, are full European Environment Agency members despite being outside the EU. As such they are able to benchmark their environmental performance without being subject to enforcement initiated by the European Commission. The European Environment Agency also cooperates with countries outside Europe, e.g. around the Mediterranean, and with UN organisations. UNECE and UNEP, the sponsoring bodies for the LRTAP and Stockholm Conventions among others, both go beyond the boundaries of Europe and include both North America and Russia.

Accepting that air pollution is transboundary by nature, that global trade means potentially polluting products that require control on an international scale and that policies in one country can have profound impacts on their neighbours, then retaining international cooperation on evidence and information can be seen as vital to successful policy development and implementation in the UK.

The UK has also developed a leading role in providing expertise in managing air quality and controlling air pollution to the international community. For example, UK expertise is strongly represented on the European Committee for Standardisation (CEN) groups on air pollution, who define European approaches to, for example, the methods for monitoring air pollution.

While future access to European markets by UK environmental companies is not yet clear post-Brexit, barriers to UK companies and institutions providing their expertise to the European Environment Agency, CEN and other such bodies would have a detrimental impact on both UK companies and the relevant European institutions.

We urge the Government to retain membership of the European Environment Agency after exit day and to continue to play an active role in supporting the evidence and policy development roles of this and other international organisations such as CEN.

Policy opportunities

Brexit could offer the opportunity to seek examples of policy making in countries and regions outside the EU and to draw on examples more suited to the UK context.

We urge the Government to take this opportunity to learn from control systems used outside the EU and to draw from the best of them in future policy making.

In his speech on 21 July 2017, Secretary of State Michael Gove acknowledged that *“the European Union has, in a number of ways, been a force for good environmentally”*. That does not mean that EU legislation and policy has been universally good nor that it could not be improved. Leaving aside the environmental impact, positive and negative, of such policies and mechanisms as the Common Agricultural Policy or Common Fisheries Policy, EU legislation directly concerned with environmental issues is not without its flaws.

One of the strengths of EU legislation is that it applies commonly to all Member States. In theory this provides a level playing field, preventing a “race to the bottom” as countries relax environmental protection to attract external investment or gain a competitive advantage. However, legislation must always strike a balance between seeking to provide environmental protection and allowing targets to be stretching but achievable. Because of economic, social or environmental (e.g. climatic and geographic) factors, not all countries start at the same place and face the same challenges. Therefore, legislation tends to be influenced more by those with the greatest challenge; put simplistically, it goes at the pace of the slowest.

Development of EU legislation, by its nature, involves a high degree of inertia. Directives often take years to draft, negotiate and agree. The concepts they contain are then written into the legislation of all Member States, whose implementation systems are then geared towards achieving whatever obligations are placed upon them. Therefore, it becomes very difficult to change those concepts and innovative policy making becomes stifled.

An example of this is the system of Air Quality Limit Values. These are concentration values for pollutants in ambient air, applying to locations where the public is routinely exposed and averaged over a given time period. While they have been a useful tool to help drive air quality improvements, they also imply that concentrations above the limit value are harmful and those below are not. Health evidence has demonstrated that this is not the case for pollutants such as fine particulate matter or ozone, and may not be so for other pollutants. However, Limit Values are an accepted concept in Europe and are written into, for example, land use planning processes and tend to be strongly supported by both Member States and NGOs. Moreover, the UK’s geographic position in Europe, with weather systems dominated by Atlantic south westerly winds, means that annual average concentrations for particulate matter (PM₁₀ and PM_{2.5}) tend to be lower than more central European states. Compliance with the limit values for PM₁₀ is universal across the UK²² and thus measures to reduce PM, probably the most harmful of the standard suite of air pollutants, are de-prioritised despite evidence²³ that health impacts continue below the Limit Value concentrations²⁴.

Brexit could offer the opportunity to seek examples of policy making in countries and regions outside the EU and to draw on examples more suited to the UK context. For example, the Canada-wide Standards (CWS) for Particulate Matter include the implementation of Continuous Improvement (CI) and Keeping-Clean-Areas-Clean (KCAC) programmes where ambient concentrations are below the CWS levels. Jurisdictions with ambient levels below the CWSs are expected to focus implementation measures on CI/KCAC. A guidance document on CI/KCAC issued by the Canadian Council of Ministers and the Environment (CCME) in 2007 recognises that the current CWS numerical targets “may not be fully protective” of human health and the environment and that PM_{2.5} has no apparent lower threshold for adverse health effects. CI/KCAC applies both to emissions and concentrations of PM_{2.5} and the emission of its precursors (NO_x, SO₂, NH₃).

Closer to home, the As Low As Reasonably Practicable (ALARP) approach has been applied to the control of certain highly toxic (carcinogenic and teratogenic) pollutants, such as dioxin, furans and PCBs. Atmospheric concentration limits haven’t been applied to such pollutants because there is no known “safe” level. Instead, all significant sources are identified and controlled to their maximum extent. There is no reason in principle why this could not be applied, either partially or wholly, to pollutants such as fine particulate matter and its precursors which also have no known “safe” level. This could lead to a similar system to that used in Canada.

We urge the Government to take this opportunity to learn from control systems used outside the EU and to draw from the best of them in future policy making.

A new Clean Air Act

New primary legislation for air pollution would provide a signal that the UK assigns a high priority to “the largest environmental risk to public health in the UK”²⁵.

We urge the Government to devote resources and Parliamentary time towards the introduction of a new Clean Air Act at the earliest opportunity.

There have, recently, been a number of calls for a new clean air act for the UK, to address modern air pollution problems. We support those calls. New primary legislation for air pollution would provide a signal that the UK assigns a high priority to “the largest environmental risk to public health in the UK”. It would also offer clear benefits to policy makers, to UK businesses and, ultimately, to the general public. As we have seen, the current body of UK air quality legislation covers a wide range of varying obligations and statutes with many parts outdated, e.g. Smoke Control Areas, and some significant gaps, such as the disconnect between LAQM and national assessment and reporting.

We have argued for the introduction of a statutory Committee for Air Quality and this will require primary legislation. In developing such legislation, the Government could also seize the opportunities to clarify the long-term aim of policy and create a streamlined legislative and policy structure, reducing the total number of legislative instruments currently on the statute book.

A new Clean Air Act could:

- Offer closer alignment with climate change policy: freed of the obligation to follow the EU’s policy structure, which splits climate change and air quality, the UK could develop a fully integrated approach, reducing policy conflicts and increasing benefits for both areas. This would place the UK back at the forefront of policy innovation for the atmospheric environment;
- Realign local and national policy: allow the efforts and expertise of local authorities to fully support national action planning and move to a closer partnership between national (and Devolved) government and local authorities. This will need to include clarity on enforcement of air quality obligations and restrictions at a local level;
- Clearly state long term goals for air quality in the UK, in the same way that the Climate Change Act did, setting stretching long-term targets which communicate the purpose and direction for policy and reporting progress towards them;
- Increase business confidence through greater transparency and simplicity, and clarify both the obligations on and opportunities for UK business, helping to stimulate the green economy in the UK;
- Establish a Committee on Air Quality.

We urge the Government to devote resources and Parliamentary time towards the introduction of a new Clean Air Act at the earliest opportunity.

The EIC view

Withdrawal from the EU presents the UK with enormous challenges. It also offers opportunities to build on and improve what we have. Air quality is a serious problem and will require dedicated and targeted action over the long term to resolve. We believe that the following steps will both seize the opportunities presented by Brexit and make a significant contribution towards addressing the air pollution problem:

1. Create a statutory **Committee on Air Quality** to both track progress towards the achievement of good air quality across the UK and to hold the Government to account, with links to statutory air quality targets;
2. Maintain international cooperation, including **membership of the European Environment Agency**;
3. Learn from the policies and measures used across the world to address air pollution and adopt a **continuous improvement** approach to particulate matter (PM₁₀ and PM_{2.5}) and its precursors (NO₂, SO₂ and ammonia);
4. Give the above statutory force through a **new Clean Air Act**;
5. Establish clear, independent and meaningful **routes of redress** on environmental issues;
6. Through these actions help to stimulate the green economy for goods and services to reduce environmental impacts.



Annex 1:

Air quality legislation in the UK

EU legislation

This forms the core of the current UK legislative framework and covers all four aspects of air quality and air pollution control policy described above. Most prominent are the **Ambient Air Quality Directive** (2008/50/EC), the **Reduction of National Emissions Directive** (2016/2284/EU, replacing the old National Emissions Ceilings Directive), the **Industrial Emissions Directive** (2010/75/EU) and the suite of vehicle emissions standards known collectively as the Euro standards. The full list is given in Table 1.

The **Ambient Air Quality Directive** lays down the concentration based limit values for key air pollutants, how these should be measured and what needs to be done where the values aren't reached. This is the directive currently driving air quality policy in the UK, and elsewhere in Europe, mainly due to the widespread and continued breach of the Limit Value for annual average NO₂ concentrations. The UK national monitoring network is shaped to fulfil the requirements of this directive, as are the reporting cycles and even the development of the current UK plan for tackling roadside nitrogen dioxide concentrations²⁶. The UK was the first country in Europe to use near real time reporting of monitoring data – there is a delay of up to an hour between measurements being taken and their appearing online – but it is this directive which currently mandates the annual analysis and reporting of those data to assess whether legal compliance with the Limit Values has been achieved.

The **Reduction of National Emissions Directive** is the second key element in the legislative framework. In effect, it brings into EU law the provisions of the revised **Gothenburg Protocol** (see below), although there are some differences between the two. The Directive (and Protocol) are aimed at reducing the transboundary impacts of air pollution and so take a wider, national emissions perspective, with “ceilings” based on the relative contributions Member States make to air pollution and deposition in other countries. It mandates the construction and maintenance of a national emissions inventory – one of the three cornerstones of the UK air quality evidence base, alongside the monitoring network and national scale modelling – and requires national emissions to be reported on an annual basis. There is also a requirement for a **National Air Pollution Control Programme** (NAPCP), the first iteration of which must be reported to the European Commission by 1 April 2019. Note that Article 50 was triggered on 29 March 2017 so while the requirement for an NAPCP will remain, it may well not be reported to the European Commission.

Industrial emissions control is addressed through the **Industrial Emissions Directive**, which consolidated a number of previous directives. At its heart is the concept of permits to operate which specify controls relevant to the process concerned but within the context of current best practice, i.e. the use of Best Available Techniques (BAT) as specified in the BAT Reference Notes (BREFs). This is a concept pioneered in the UK²⁷, under the **Environmental Protection Act 1990** and, in general, it has been highly successful in limiting industrial air pollution emissions while allowing business to remain competitive. The BREFs are developed at the European IPPC Bureau²⁸ in Seville by panels of experts from across Europe.

The “Euro standards” cover both light and heavy-duty vehicles on the road but can be considered to also address non-road mobile machinery (NRMM), such as construction machinery. The standards refer to a maximum emission rate for specified pollutants for new vehicles or engines, with one example of each model required to be tested before that model is certified for sale. Euro 1 for cars became mandatory in 1992 and the current iteration, Euro 6, became mandatory in 2014, with each iteration in between setting tighter standards. The problems with the Euro standards have been well documented, especially in relation to NO_x emissions and diesel cars, but it is often overlooked just how successful they have been in reducing vehicle emissions. The Euro standards, alongside changes to fuel composition necessary to allow the advanced emissions control equipment which all new road vehicles are fitted with, have effectively eliminated CO, SO₂ and lead as urban air pollutants. Emissions of particulate matter from diesel exhausts have been controlled to the extent that they are very difficult to measure in mass units and the exhaust pipe is no longer the dominant source (brake and type wear can produce far higher mass measurements of PM). However, as recent test data have shown^{29 30}, as emissions equipment has become more sophisticated, the gap between the best and worst in terms of real, on-the-road emissions, has widened. This means that while some vehicles perform relatively well in on-the-road testing, others greatly exceed their emissions limits. This in turns means that the relevant Euro standards for a vehicle is not necessarily a good indication of how a vehicle performs in reality.

Table 1: EU Directives and Regulations covering air quality

Directive/Regulation		Pollutants/Substance Regulated
Ambient Air Quality		
2008/50/EC	Ambient Air Quality Directive	NO _x , NO ₂ , PM ₁₀ , PM _{2.5} , CO, SO ₂ , Pb, Benzene
2004/107/EC	Air Quality Management and Assessment	As, Cd, Hg, Ni, BaP
National and Sectoral Emissions		
2016/2284/EU	Reduction of National Emissions	NO _x , PM _{2.5} , SO ₂ , NMVOC, NH ₃
2010/75/EU	Industrial Emissions Directive	NO _x , PM, SO ₂ , CO, VOC, NH ₃ , heavy metals
2015/2193	Medium Combustion Plant	NO _x , PM, SO ₂
715/2007	Light-duty vehicles Euro 5 and Euro 6	NO _x , PM, CO, HC, Particle Number
595/2009	Heavy-duty vehicles Euro VI	NO _x , PM, CO, HC
2012/46/EU	Non Road Mobile Machinery	NO _x , PM, CO, HC
2004/42/EC	Emissions from Paints and Varnishes	VOC
Fuel Quality		
99/32/EC	Liquid Fuels – Industrial Use	Sulphur
2003/17/EC	Fuel Quality – Road and NRMM	Sulphur
2012/33/EU	Fuel Quality - Shipping	Sulphur
Greenhouse Gases		
2009/28/EC	Climate Change & Energy	N/A
EC 2030	Framework for Climate and Energy	N/A
2014/94/EU	Deployment of Alternative Fuels Infrastructure	N/A
2009/125/EC	Eco-design	N/A

UK air quality legislation not derived from EU legislation

In general, UK air quality legislation not derived from EU Directives deals with issues and sources which are either too small to be picked up at an EU level or which could be described as “local implementation”. Neither of these descriptions should be regarded as pejorative or dismissive as this legislation covers approaches and principles which could be built on in the development of a new Clean Air Act.

The **Clean Air Act 1956**, i.e. the original Clean Air Act, was passed in the wake of the Great London Smog of 1952 which killed many thousands of people. The latest iteration was passed in 1993. Its principle aim was to eradicate dark smoke emitted as a result of coal burning or other forms of open combustion. It gave local authorities the power to create Smoke Control Areas within which the burning of non-approved fuels, e.g. coal, or the use of non-exempt fireplaces in domestic premises is illegal. Those Areas are still in existence and Defra still maintains a list of exempt solid fuel appliances, an issue which has come into sharper focus with the increased use of log burning stoves and biomass boilers in UK towns and cities. It also created new offences around the emission of dark smoke, grit, dust or fume from industrial or trade premises. This has largely been superseded by industrial emission control legislation – the **Industrial Emissions Directive** at EU level and **Local Authority Pollution Control**³¹ in the UK – but the general prohibition on dark smoke remains, as do the requirements for furnaces to have chimneys above a certain height.

Part IV of the **Environment Act 1995** set up the system of Local Air Quality Management (LAQM). Under it, all local authorities are required to review and assess the air quality within their jurisdiction and, where it appears that national Air Quality Objectives (similar but not identical to EU Limit Values) are not or will not be met, they must declare an Air Quality Management Area (AQMA). Once an AQMA is in place, the authority must develop and maintain an Air Quality Action Plan which sets out how it intends to use the powers at its disposal to pursue achievement of the Objectives. Note that neither the Act nor its accompanying regulations confer new powers on local authorities, nor are local authorities required to ensure that the objectives are actually met. This latter point, plus the differences between national Objectives and EU Limit Values in terms of the way in which compliance is assessed, means that there is a disconnect between the obligations on local authorities under LAQM and the obligations on UK Government under the Ambient Air Quality Directive.

The **Environmental Protection Act 1990** created a system of integrated pollution control (IPC) for industry, i.e. control of emissions in a holistic way, considering emissions to air, land and water simultaneously. Potentially polluting industrial processes were divided into two categories: Part A were the larger processes which required a permit to operate from the Environment Agency in England and Wales (SEPA and DOENI in Scotland and Northern Ireland respectively) and which were to be covered by IPC in its full form. Less polluting processes were categorised as Part B and were subject to Local Authority Pollution Control, which also required a permit to operate but which only covered emissions to air. The Part A provisions have largely been superseded by the Industrial Emissions Directive (to which they were very similar) but LAPC remains in place, albeit with amendments to its scope and structure since the 1990 Act.

International obligations beyond the EU

In 1979, recognising that impacts of air pollution could be transboundary in nature, countries in the European region signed the **UN/ECE Convention on Long-range Transboundary Air Pollution** (CLRTAP). This created the first international treaty to deal with air pollution on a broad regional basis. The CLRTAP provided an institutional framework that brought together scientific research and policy formation, and the principles of international cooperation for air pollution abatement.

The original Convention has been substantially extended by eight Protocols, which include a range of national reporting commitments such as emissions inventories and ambient concentration measurements. The most widely known is the **Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone**, which is a multi-pollutant Protocol designed to reduce acidification, eutrophication and ground-level ozone by setting emissions ceilings for sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and PM_{2.5}. The geographical scope of the original Convention has also expanded, and now includes North America, Europe and parts of Asia.

The reporting of consistent data from Parties to the CLRTAP combined with co-ordinated scientific research, means that the CLRTAP is able to provide information on the effects of air pollution on ecosystems, health, crops and materials across the regional scale. By drawing on these data, the detailed pollution modelling activities within the CLRTAP allows pollution control measures to be assessed, and equitable emissions reductions targets to be set for each country.

The CLRTAP has a strong focus on research and science, with formal submissions from each country undergoing technical reviews, to assess whether the data are of good enough quality for use in CLRTAP research. Compliance with binding commitments (such as emissions reduction targets) are also assessed, by the CLRTAPs Implementation Committee. Unlike the EU's Reduction of National Emissions Directive, the CLRTAP does not have the power to impose financial penalties on Parties to the Convention which are not meeting their reporting obligations or national commitments.

Environmental activities within the United Nations are co-ordinated by UN Environment. This has a wide remit including not just air quality issues, but also climate change, marine and terrestrial ecosystems. Aspects of UN Environment Conventions are concerned with air quality issues.

The **UN's Stockholm Convention** is concerned with addressing the threat to human health and the environment from the use of POPs. The Convention entered into force in 2004, with Co-signatories to the Convention agreeing to ban the use of selected POPs, and restrict the use of others to specific applications. Since then, further POPs have been added to the Convention. The Stockholm Convention was adopted into EU legislation in 2004, and has many parallels with the POPs Protocol within the CLRTAP. The UK has ratified the Stockholm Convention.

The **Minimata Convention** has been developed from the UNEP Global Mercury Partnership, with the Convention being adopted in 2013. The objective of the Convention relates to the entire lifecycle of Mercury, and aims to protect human health and the environment from Mercury emissions. The Convention includes emission controls and reductions in use across a wide range of industries and products. The UK is a signatory to the Minimata Convention.

Endnotes

1. <https://www.eea.europa.eu/highlights/improving-air-quality-in-european>
2. http://www.euro.who.int/__data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf
3. <http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/news-parliament-2017/governments-environmental-policy-michael-gove-evidence-17-19/>
4. <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>
5. United Nations Economic Commission for Europe
6. Formerly the United Nations Environment Programme or UNEP
7. Protocol to Abate Acidification, Eutrophication and Ground-level Ozone;
http://www.unece.org/env/lrtap/multi_h1.html
8. <http://services.parliament.uk/bills/2017-19/europeanunionwithdrawal.html>
9. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/642869/Factsheets_-_Environmental_Protections.pdf
10. <https://www.gov.uk/government/speeches/the-unfrozen-moment-delivering-a-green-brexite>
11. <https://www.ukela.org/content/doclib/320.pdf>
12. <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>
13. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/633269/air-quality-plan-overview.pdf
14. There are limits to the availability of Judicial review even in such cases, such as the need to have sufficient interest in the matter. There are also strict time limits.
15. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/642869/Factsheets_-_Environmental_Protections.pdf
16. http://www.barcouncil.org.uk/media/575229/brexit_paper_22_-_environmental_law.pdf
17. <http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/news-parliament-2017/governments-environmental-policy-michael-gove-evidence-17-19/>
18. <https://www.ukela.org/content/doclib/316.pdf>
19. Climate Change Act 2008, Schedule 1, 27(1)
20. Climate Change Act 2008, Article 39(1)
21. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69635/pb13837-aqeg-fine-particle-matter-20121220.pdf
22. When assessed using the methodologies required by the Ambient Air Quality Directive
23. http://www.euro.who.int/__data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf
24. There are exceptions to this, for example in London and Scotland, but this depends on local or regional priorities.
25. <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>
26. <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>
27. The UK version was Best Available Techniques Not Entailing Excessive Cost (BATNEEC); the NEEC part is implied for the EU version.
28. <http://eippcb.jrc.ec.europa.eu/>
29. <http://equaindex.com/>
30. <https://www.transportenvironment.org/publications/dieselgate-who-what-how>
31. Including the equivalent legislation in Scotland, Wales and Northern Ireland



About EIC

The Environmental Industries Commission (EIC), founded in 1995, represents the businesses which provide the technologies and services that deliver environmental performance across the economy. In short, we are the voice of the green economy. Our members are innovative and the leading players in their field, and include technology manufacturers, developers, consultancies, universities, and consulting engineers.

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