

## **GARNER LECTURE**

### **Environmental Science, Law and Policy – challenges and opportunities**

Good evening everyone and many thanks for inviting me to give this prestigious lecture. It is a great privilege to be here.

I have entitled it 'Environmental science, law and policy – challenges and opportunities' in order to cover all the aspects of environmental protection of which we need to be aware. It is also the strapline of the Castle Debates, which were founded some six years ago.

By way of introduction, my background is in science (that is, chemistry with physics and maths) in which I worked for a number of years before I moved to law and qualified as a solicitor, at just about the same time as UKELA was founded (1987) and when EEC environmental legislation was proliferating. The timing could not have been better for me, as I was already well versed in environmental issues, and this gave an opportunity to be involved in the development of environmental law and policy. I am not an expert in Planning Law however, which was ably handled by a separate practice in my law firm CMS Cameron McKenna, now CMS.

For the purposes of this lecture, I intend concentrating on the natural environment: air, space, water, land, plants and wildlife, as well as phenomena such as energy, radiation and

magnetism. Other names of course are the Ecosystem, the Biosphere, Mother Nature, Gaia, Natural Heritage and in more recent years, Natural Capital, the world's stock of natural resources, which provide us with a wide range of free goods and services and which underpin our economy and society.

As is well rehearsed, the natural environment, globally, is suffering abuse from human activity (for example, atmospheric pollution, overconsumption, population growth, technological development) being downgraded sometimes permanently to a point where human existence - or at least existence with a reasonable quality of life- and biodiversity etc. are under threat.

In particular, there are unequivocal signals from the natural world that greenhouse gas emissions are causing global warming giving rise to, for example, extreme weather conditions, record temperatures, severe flooding, altered habitats, water and food shortages, and ocean acidification.

In the UK we are equally vulnerable, yet the Government has axed some nine major environmental policies since May 2015, from the removal of support for carbon capture-and-storage, for zero-carbon homes, for solar power and for on-shore wind farms and has sold the Green Investment Bank. DEFRA (and the Environment Agency) have suffered a 30% reduction in their budgets and DECC has been dismantled and merged with BIS to form BEIS (Business, Energy and Industrial Strategy).

In this context, and adding to our uncertainties, are, of course, Brexit and President-Elect Trump.

In relation to Brexit, all we know so far is that the proposed Great Repeal Bill will be introduced in the next Parliamentary session beginning with the Queen's speech in May. When enacted it will annul the European Communities Act 1972 which translates EU legislation directly into UK law, and as a result, we understand that the UK Parliament will initially retain all EU legislation and then be free to retain or discard individual laws as it thinks fit. What this will mean in practice is unknown, causing much concern and discussion, but just recently Andrea Leadsom told the Environmental Audit Committee that about a third of EU legislation would not be retained because of 'technical issues'. I will come back to this later. However, it will not be enacted until completion of the two-year process of leaving the EU under Article 50 of the Treaty of the European Union, which the Prime Minister has said will begin in early 2017, again in doubt as a result of the High Court judgment which held that the Government does not have prerogative power to decide this without approval of Parliament. The Government will appeal this at the Supreme Court on 5<sup>th</sup> December.

Encouraging news is that the Government's 25 year Plan for the Natural Environment, a framework for environmental and agricultural policy across the full range of DEFRA's remit, produced in response to reports by the Natural Capital Committee, is to go ahead. However, the prospects for a separate 25 year Food and Farming Plan are not clear. The

Government has also confirmed that its National Flood Resilience Review, published in September, which assesses fluvial and coastal flood risk and the impact on people and the economy, will go ahead, - but it has received criticism, for example, from both the Environmental Audit Committee and from the Environment and Rural Affairs Committee, for not going far enough. Other very welcome news is that the Government has announced details of its plans to phase out unabated coal power by 2025 and boost renewables.

In times of minimal or no financial constraint and in addition to subsidising expensive environmentally protective strategies and projects (such as carbon-capture-and-storage), a government has the possibility of three main strategies for providing environmental protection, either to prevent or remedy environmental damage and they are: so-called command-and-control regulation, market-based instruments and the raising of awareness with a view to changing behaviour. Taking these in reverse order:

### Raising awareness

I am sure I am not alone in feeling intense surprise, if not shock, at the number of people who express disinterest or disbelief in the current environmental problems which are causing potentially lethal damage to our environment or think that technology will step in and rectify any adverse situation we find ourselves in.

This is where the inclusion of environmental awareness in the school curriculum would be of enormous advantage, but an already overcrowded agenda, restricted resources and

lack of enthusiasm makes this a tenuous proposition although some progress has been made and much depends on individual schools.

It was also the fundamental reason for setting up the Castle Debates, in an attempt to raise awareness of environmental problems, with a view to assisting in changing the attitude of sceptics and changing general behaviour and opinions, thereby encouraging the Government to take adequate steps to ameliorate a potentially adverse situation. I think you will agree that there is some improvement in general awareness of the threats of disaster (for which we claim no credit!) but I fear that any significant improvements will be driven by actual disasters, when the imposition of strict regulation or fiscal measures can be justified – but unfortunately, after the event, in many cases. When the current situation is one of financial austerity these measures are difficult to justify - but what happened to the Precautionary Principle? Remember that?

It has been suggested that to have more engagement with the public we should refer to improved human health and well-being rather than to protection of the environment. This would have more traction with the general public than referring to protection of a range of natural phenomena of which they have no knowledge or engagement. I think there is much strength in that argument.

I remember that in 1998 the then Deputy Prime Minister, John Prescott - now Lord Prescott of course - launched a campaign entitled 'Are you doing your bit?' - in order to

encourage small but important behavioural changes in our everyday actions to benefit the environment. The campaign cost in the region of £25 million involving TV advertisements, national radio, consumer press, posters and bus sides. It was not deemed a success, was thought to have had little effect on the general population and, in the long run, was a complete waste of money. **(1)** So it is not easy!

### Market-based instruments

The EU has increasingly favoured economic or market-based instruments (MBIs) such as taxation, targeted subsidies or tradeable emission rights. These are considered to have advantages over direct regulation in that they are more cost-effective, achieving given targets for reduced pollution or reduced energy at a lower cost to governments, incentivising innovation ( for example, through taxes and tax breaks) and providing an efficient source of public revenue.

An example, of course, is carbon pricing, the method favoured by many economists for reducing global warming emissions, the carbon price being the price that must be paid for the right to emit one tonne of carbon dioxide into the atmosphere (or its equivalent for other greenhouse gases). It usually takes the form of either a carbon tax or the requirement to purchase permits to emit, generally known as 'cap-and trade'. The carbon tax is becoming more popular, and particularly favoured by the UK but we are still part of the EU Emissions Trading Scheme which limits or caps emissions from more than 11,000 heavy energy-using installations (power stations and industrial plants) and from

airlines operating between EU countries and Iceland, Lichtenstein and Norway. This creates a market in which capped allowances may then be bought and sold within the system. Obviously, how Brexit will affect our participation is far from clear.

However, a recent report from the European Environment Agency highlights, among other things, the success of MBIs for environmental protection but with the potential weakness for governments with regard to revenue generation in that the more effective they prove to be, the less revenue they generate.

I am not an economist so will not go into more detail, but I include an information reference as part of this paper **(2)**.

### Command-and-Control Regulation

By the end of the 20<sup>th</sup> century, environmental law was established as a component of the legal landscape in all developed nations of the world - and also many developing nations - as well as the larger project of international law, which I shall come back to.

However environmental law and regulation is a continuing source of controversy over its necessity, its fairness and its cost, both to the regulator and to the regulated. There are concerns on the general lack of enforcement both nationally and internationally and difficulties arise in performing cost-benefit analyses, although at least in the UK the concept of Natural Capital, which assigns economic benefits to the natural environment, is gaining ground rapidly. It is not

without its critics however, on the grounds that it reduces Nature to the status of a commodity to be marketed at its exchange value. **(3) (4)**

In the UK, the development of environmental law can be traced back to the protection of private or common property under common law, namely under the torts of nuisance, negligence or trespass, its scope being limited to the protection of private interests and not those of the wider environment. On the basis that pollution control through torts was limited, the concept of statutory nuisance was developed some 150 years ago and then eventually consolidated under the Environmental Protection Act 1990. It is subject to control by the local authority by the issuing of an abatement notice, breach of which involves prosecution and a fine. Individuals may also apply to the Magistrates Court for an abatement notice. However, these changes are limited and they do not provide protection of the unowned environment, resource depletion, degradation, cumulative health problems or other environmental threats.

Areas covered by modern regulatory control regimes and enforcement agencies are very wide ranging and now of course, one of the most important is the Climate Change Act 2008 – but, although it is one of the most important, addressing global warming and climate change and attracting much attention - we must not lose sight of the full range of other environmental problems we face, such as chemicals in the environment, the management of waste, population growth, air pollution, reduction in natural resources etc..

The Climate Change Act requires that in the UK by 2050 there will be an 80% reduction from 1990 levels in six greenhouse gases, namely, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. With a view to meeting this target the Government must set 5-yearly Carbon Budgets, that is, the amount of carbon dioxide or its greenhouse gas equivalents (as rated by their Global Warming Potential (GWP)) that the UK is able to emit as its contribution to limiting a global temperature rise to 2C above pre-industrial levels, that is, basically before the widespread use of coal. The name, 'carbon budget' is misleading of course, because not all the identified greenhouse gases contain carbon.

The Fifth Carbon Budget for the period 2028-32 was set by the Government in July this year under advice from the Climate Change Committee and Adaptation Sub-Committee. Its aim is that by 2032, annual emissions in the UK will be at an average of 57% below 1990 levels.

It requires among other things a continuation of the take up of ultra-low emission vehicles (for example, electric and plug-in hybrid cars) and low-carbon heat (for example, from heat pumps which absorb heat from the atmosphere). Also, although targets in the Act itself do not include the contribution of the UK to international shipping or aviation emissions as determined by the International Maritime Organisation and the UN agency, the International Civil Aviation Organisation respectively, the Fifth Carbon Budget does include emissions from international shipping.

International aviation emissions are not included, however, apparently on the grounds that appropriate accounting for these emissions remains uncertain.

Another crucial area is the production, use and disposal of chemicals which have all been linked to a very wide range of environmental and health problems through exposure to contaminated sources such as water, air, food and consumer products. The cornerstone of the EU's approach to regulating the production and use of chemicals is the 2007 EU Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals, known by the acronym REACH, with the UK enforcement regime in place in 2008. From the citizen's point of view it all sounds very encouraging, but as we heard from a Castle Debate on the subject, it involves a lengthy implementation process with complex procedures for authorisations and restrictions and in the UK, severe resource constraints. In all cases there is a need to improve knowledge on the effects of multiple exposures, cumulative risk assessments of chemical cocktails etc. and methods for risk assessment. It was concluded at the Debate that we have a long way to go before effective precautions will be taken.

When one examines the amount of environmental law throughout the world- Africa, Asia, Europe, North America, South America, Oceania (that is, islands of the tropical Pacific Ocean and Australia and New Zealand) the list is very impressive covering protection of water, air, wildlife etc., but a constant theme is the huge variation in the level of enforcement. Take for example, China, India and Brazil, all of

which have ratified the UN Framework Convention on Climate Change (UNFCCC) but deemed to be some of the world's greatest polluters.

### China

Rapid economic and industrial growth has led to significant environmental degradation and China is in the process of developing more stringent controls and a solid environmental law framework. The new Environmental Protection Law came into force in January 2015. It is enforced by local environmental protection bureaux but the level of enforcement has been very varied. It is improving rapidly in the face of public reaction to severe pollution and the acknowledgement that economic sustainability is threatened.

Just on a personal note, in 1997 I was part of a European Commission Delegation to Beijing, headed by the late Lord Howe and Michael Beloff QC, in response to an invitation to discuss the then current state of EEC environmental legislation with a view to bringing in new laws in China. They seemed to be very enthusiastic and that appears to be reflected in the amount of environmental legislation which has been enacted since that time.

### India

In India, environmental law is governed by the Environment Protection Act 1986, which is enforced by the Central Pollution Control Board and numerous State Pollution Control Boards to enforce rules covering a wide range of

environmental pollution and the protection of water, air, wildlife etc. but again the level of enforcement is often very weak and environmental degradation remains a problem.

### Brazil

The Brazilian government produced the Brazilian Environmental Policy in 1981 and created the Ministry of Environment in 1985 in order to develop better strategies for protecting the environment, to use natural resources more sustainably and to enforce environmental policies. However the drive for economic growth is severely depleting natural resources and causing a massive loss of biodiversity. The same story!

### International Agreements

Global and regional environmental issues are increasingly the subject of international agreements covering terrestrial, marine and atmospheric pollution through to wildlife and biodiversity protection.

By my estimate there are some 60-70 international environmental agreements to which the EU is a contracting party. They include treaties (which can be signed by member state representatives), conventions (which have to be ratified by member states) and protocols, which are subsidiary agreements under a primary treaty and which are particularly useful in environmental law as they can incorporate recent scientific developments and allow countries to agree matters in principle, in the knowledge that, with agreement, they can be updated.

The first document in international environmental law to recognise the right to a healthy environment was the 1972 Stockholm Declaration by the UN Conference on the Human Environment at its 21<sup>st</sup> Plenary Meeting. It led to the establishment of the UN Environment Programme

The international response to Climate Change began at the Rio de Janeiro Earth Summit in 1992, where the 'Rio Convention' or UN Framework Convention on Climate Change (UNFCCC) was adopted and which now has a near universal membership of 197 parties. Its purpose is to stabilise greenhouse gas concentrations in the atmosphere at a level which would 'prevent dangerous anthropogenic interference with the climate system'.

It holds an annual Conference of Parties (COP) to review the Convention's implementation. The first COP – COP1 -took place in Berlin in 1995 and, as you will be aware, COP 21 was held in Paris in November last year. This aims to achieve a legally binding and universal agreement to hold the increase in the global average temperature to well below 2C above preindustrial levels and to pursue efforts to limit this to 1.5C. It is a separate instrument under the UNFCCC rather than an amendment or successor to the Kyoto protocol, which came into force in 2005.

The Paris Agreement was opened for signature on 22nd April 2016 at a ceremony convened by the Secretary General in New York. Article 21 of the Paris Agreement provides that the Agreement shall enter into force on the thirtieth day after the date on which at least 55 Parties to the Convention,

accounting in total for at least 55% total global greenhouse gas emissions, have ratified the Agreement. This was achieved in October and the Agreement came into force on 4<sup>th</sup> November. The first meeting of the parties is currently taking place (from 7<sup>th</sup> -18<sup>th</sup> November) in conjunction with COP 22 in Marrakech. As you will be aware, China, India and Brazil - and the USA have all ratified the Agreement – but, and you will know what I am about to say- Donald Trump has declared that the USA will take no part in the Agreement which he will ‘tear up’ on the grounds that ‘climate change is a Chinese hoax invented to put American firms out of business’. Russia has yet to ratify, as has the EU, but EU national states are free to do so, which France has already done. We are told that the UK is due to ratify by the end of the year.

The Agreement has been criticised though on the grounds that the country pledges are too low to achieve the aim of 2C above pre-industrial levels, that the agreement consists of ‘promises’ or aims and not firm commitments and that there is no binding or enforcement mechanism. This is in the context of 2016 being the hottest year on record, with the average temperature being 1.2C above pre-industrial levels.

In another move to reduce the effects of emissions on global warming, on 6<sup>th</sup> October a global scheme was agreed by 191 nations, including the UK, at the International Civil Aviation Organisation. Its declared aim is to curb aviation emissions from passenger and cargo flights but, in fact, it does not involve a cap on emissions but, instead, is an off-setting

scheme where forest areas and carbon-reducing activities will be funded by about 2% of the industry's revenues. It has received strong criticism in that the level of emissions will not be reduced.

Also of note, of course, and not directly connected to climate change, is the Aarhus Convention which was adopted in the Danish city of Aarhus in 1998 and ratified by both the EU and the UK in February 2005. Just to reiterate: it provides (a) the right of everyone to receive environmental information held by public authorities, (b) enables the affected public and environmental NGOs to comment on projects, plans and proposals which should be taken into account in the decision-making process and to be informed on final decisions and (c) provides the right to challenge where the first two have not been adhered to, 'and in doing so should not be prohibitively expensive' - in other words, given access to justice (Article 9)

There have been many claims over the years that the UK has long been in noncompliance particularly in relation to the costs rules (although somewhat ameliorated in recent years by the limitation on adverse costs and by the introduction of Protective Cost Orders) but exacerbated by the shrinking of legal aid.

I am sure you are all very familiar with this, but I refer to it to highlight the major criticism of such agreements. On paper they seem very optimistic but in practice can be rendered meaningless by the absence of the means of enforcement.

## Castle Debates

I now turn to the role of law and policy in specific environmental scenarios, which are taken from the Castle Debates, working closely with your Chairman and Castle Debates Partner, Stephen Sykes. Firstly:

### Biodiversity Loss

Some 25% of all species are threatened with extinction: 40% of amphibians, 25% of plants and 12 % of birds. The species extinction rate is 100-1000 times greater than the typical background rate throughout Earth's history. It is a decline that impacts food supply – one billion people depend on fish as their main source of protein yet 33% of fish stocks are overexploited or dwindling. In addition to overexploitation, land use change, pollution, invasive species and climate change are drivers of biodiversity loss.

There is no shortage of legislation however with about a dozen separate legal regimes in the EU and UK (for example the Habitats Directive, the Birds Directive and Natura 2000, an EU network of protected areas, which includes the UK's Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs)); the same at international level (for example, the Biodiversity Convention)

However, it was made clear at the Debate that any political discussion on biodiversity has always given precedence to economic growth and the legislation tends to be reactive rather than proactive. It was agreed that it is essential to show the link between a healthy environment and a healthy

population for any progress to be made. However, as said, we now have the growing popularity of the concept of Natural Capital, supported by Government, linking the protection of biodiversity with economic development and the 25 Year Environment Plan, which we have been assured will be retained.

### The Common Agricultural Policy

The European Common Agricultural Policy was created by the Treaty of Rome in 1957 and implemented in 1962 with the purpose of guaranteeing minimal levels of production so that there was enough food in Europe and that those involved in agriculture were ensured a fair standard of living. It has been subject to substantial reforms but it was concluded at the Debate that it was impossible to support farming policies for 28 countries with hugely different levels of food production, populations, climates and soils. It is complex to administer at a European level, balancing food production, managing land for other purposes and managing the environment. Farms in countries like Austria are receiving several times greater levels of subsidy than farmers in England. Moreover, levels of subsidy vary across the UK and we have recently seen reports on the unbelievably high subsidies to very rich land owners. How it will be replaced after Brexit is far from clear.

## Air pollution

It is calculated that air pollution causes some 40,000 early deaths a year in the UK and 400,000 globally. It is clear that emission controls are not working. There are serious problems with invisible pollutants such as particulate matter and nitrogen dioxide, the major source of which is transportation, especially from the use of diesel fuel.

Particulate matter is comprised of ultrafine materials being 10 microns or less in diameter, (a micron being one-millionth of a meter), which can travel through the human lung wall into the blood system, causing primarily, cardiopulmonary problems. We also now hear that air pollution from small magnetic particles of iron ore, generated, for example, when vehicles brake or burn fuel, put people at a greater risk of Alzheimer's disease

UK air quality standards are set out in the Environment Act 1995 and predominantly the Air Quality Framework Directive 2008/50/EC. In last year's case brought by ClientEarth, referred to in the 2015 Garner Lecture by its CEO, James Thornton, the Supreme Court declared that the UK is in breach of Article 13 of the Air Quality Framework Directive because of nitrogen dioxide failures. The European Commission is also taking action against the Government for its failure to comply with the Directive and to prepare Air Quality plans to meet requirements under Article 23. The Government produced a submission to the European Commission in December 2015 stating that it will meet the nitrogen dioxide limits in the shortest possible time. On

ClientEarth's application, the High Court then decided that the UK Government should face renewed action over air quality as the Government's Plan would not bring UK air pollution within legal limits until 2025. The case was heard on the 18-19<sup>th</sup> October and it was held that the Plan was deficient both with regard to the Supreme Court Ruling and the Directive. I understand that this is not to be challenged by the Government and that agreement on the way forward is being negotiated.

### Flooding

One in six homes in the UK is at risk from flooding. In times of climate change, properties do not necessarily have to be close to a river or the sea to be vulnerable. Surface water, groundwater and overflowing sewers are increasingly common causes. Proposed remedies include improved land management, flood defences and other technical solutions, all of which of course will incur substantial cost.

Our understanding of flood risk is based on models which may be flawed. The interaction between surface flooding, groundwater flooding and flash flooding as well as the overarching impact of a warming climate, need to be better understood. However, it may not be practical and will certainly not be affordable for us to protect all low lying areas. Some localities will inevitably be sacrificed to rising water levels.

Despite this, development in flood plains grew at a faster rate than elsewhere in England in recent years. Although the Environment Agency is a statutory consultee on flood risk in

planning developments, staff reductions mean it is only focussing on large applications. Local planning authorities must take climate change into account in their decisions but these are not necessarily reported back to the Environment Agency. Equally, climate change is a key threat to businesses, particularly to those with high value long-term assets, yet there are no obligations on Chief Executives to take action on adaptation.

In the UK a jigsaw of statutes deals with flood risk, one of which is the Flood and Water Management Act 2010. This seeks to divide flood and coastal erosion management between local authorities, the Environment Agency and regional coast committees. These agencies have faced much criticism over recent years and according to the ABI the cost in one year alone reached £3.5bn.

As mentioned, the Government has now produced its National Flood Resilience Review to assess how the country can be better protected from future flooding and extreme weather events. In a six year investment programme, flood and coastal defences will be strengthened, there will be better management of rainfall and whole river catchments will be managed in their entirety. However, as said, scepticism has been expressed on the level of funding and the effectiveness of its strategy.

## Brexit

So far, the effect of Brexit on environmental law and policy is far from clear and questions are being raised by interested –

and very concerned - parties across the nation and in both Houses of Parliament.

Questions have ranged across the whole gamut of environmental issues including protection of biodiversity and habitats; the reduction of air pollution; the maintenance of clean bathing water; the security of energy supply including renewable energy and whether the UK will remain part of the EU Energy Union; Common Agricultural Policy and Common Fisheries Policy replacements; the loss of access to relevant EU funding and which organisations will replace the European Commission and the European Court of Justice to hold the Government to account. There is also the complication of different approaches in the devolved administrations. The list goes on and it will obviously be some considerable time, probably a very long time, before we have any clarity and certainty.

I understand that UKELA has set up a Brexit Task Force, comprising 27 UKELA members, to take, amongst other things, proactive measures in the post-Brexit review of environmental law. The first area to be considered will cover habitats.

### Conclusions

So what are we looking for in our environmental legislation? The World Environmental Law Congress of the International Union for the Conservation of Nature which took place at Rio de Janeiro in April and described by Lord Carnwath at the UKELA Conference, the Foundations of the Environmental Rule of Law should include, amongst other things, 'The

development, enactment and implementation of clear, strict, enforceable and effective laws, regulations and policies that are efficiently administered through fair and inclusive processes to achieve the highest standards of environmental quality at national, sub-national, regional and international levels'

In the UK there is certainly a need for our environmental laws and regulations to be simplified so that they are more understandable and easier to enforce. They are often characterised by over complexity and lack of coherence as a result of their being developed in an ad hoc manner and insufficient weight given to sound science.

The Government's initiative to improve and simplify regulation, known as the Red Tape Challenge **(5)** was launched in April 2011 and in March 2015 it was announced that some 650 legislative reforms, including a significant number on environmental issues, had been made. These resulted in the revocation and/or repeal of moribund legislation as well as consolidation and simplification of requirements that were spread across several statutory instruments or that had been subject to numerous amendments. Areas included revocation of water classification schemes which have been superseded by the Water Framework Directive; the re-implementation of twelve different statutory instruments under the Environmental Liability Directive as the Environmental Damage (Prevention and Remediation) (Amendment) Regulations 2015 and most important, a 2015 Order exempting different types of

fireplace from the smoke control provisions of the Clean Air Act 1993. Overall, environmentalists found reassurance in that the changes focussed more on form rather than substance.

However, not all the issues that were explored in UKELA's research project on the State of UK Environmental law 2011-12 **(6)** which considered the crucial issues of coherence, transparency and integration were dealt with in the Red Tape Challenge and there is still some way to go. Whether this will be achieved in the complexities of Brexit would seem unlikely in the near future.

In terms of policy, our senior public figures need to show more effective engagement to make the case for protecting the common inheritance of our environment, to give credence to sound science, to promote education and produce accurate statistics on the environment to help people understand environmental issues and make better environmental choices. They also need to work across Government departments with greater effectiveness.

They should give better access to environmental justice and reduce the need for costly environmental regulation and enforcement.

These are obviously not only national issues but are of vital importance for the whole world and ones which if current progress is not improved will end in very tragic circumstances and as far as our progeny is concerned, in the not-too-distant future.

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