

UK Chemicals Strategy – Submission to DEFRA made in May 2021 before its invitation to provide evidence

Author: Nigel Haigh OBE, Honorary Fellow, Institute for European Environmental Policy UK (IEEP UK)¹

1. Scope of this submission

The Government's environmental plan of 2018 - *A Green Future: Our 25 Year Plan to Improve the Environment* - promised a UK strategy for chemicals. Like the 'Plan' this submission takes a medium to long term view. Its main conclusion is that the UK's primary legislation on chemicals is no longer fit for purpose, and that the UK needs a new Chemicals Act to be administered by a new UK-wide Chemicals Agency². The Act would require the Chemicals Agency to take a broad view of chemicals policy that would give it a clearly visible place within pollution policy. This would contrast with the narrow view of chemicals policy that currently prevails. An ambitious strategy needs an equally ambitious institutional and legal framework to deliver it.

A pivotal moment for chemicals policy was the realization in the early 1990s that some chemicals were disrupting the endocrine system in wildlife, with serious implications for human reproduction, but this submission is not concerned with scientific discussions of how EDCs (endocrine disrupting substances) can be identified and regulated. It does not present scientific arguments nor is it concerned with the assessment of the hazard and risk of chemicals. Instead, it concentrates on the institutional framework for managing chemicals throughout their commercial and environmental life cycles.

EU chemicals policy has dominated UK policy (and that of every EU Member State) more completely than any other field of environmental policy³. It developed both as an aspect of environmental policy and also to maintain the integrity of the EU single market. Though the Brexit referendum did not require it, the UK Government has chosen to be outside the single market (with the exception of Northern Ireland). Nevertheless, UK exporters of chemicals will still have to follow EU legislation so it will continue as a point of reference for UK policy, and any divergence will always be noted and publicly debated. This submission shows how existing UK chemicals policy evolved together with EU policy and is likely to continue to do so.

2. The origins of legislation for industrial chemicals

¹ This submission is made in a personal capacity though with the knowledge of IEEP and of CHEM Trust of which I am a trustee.

² The need for new UK primary legislation was suggested in my written evidence to the Commons Environment Audit Committee 11th Report 2016/7 *The Future of Chemicals Regulation after the Referendum*

³ The reasons for this are given in the brief history of EU chemicals policy contained in Chapter 7 '*Chemicals – the Cinderella of environmental policy*' in my book *EU Environmental Policy – it journey to centre stage* 2016 Routledge.

Unlike many other countries the UK has no overarching Chemicals Act. The two UK Acts that first provided powers to control chemicals in 1974 were quickly overtaken by EEC legislation. There were two distinct phases to this EEC legislation, separated in time by more than ten years, the first dealing with *new*, and the second with *existing* chemicals as described in Sections 2.1 and 2.2 below. REACH later consolidated and reformed that legislation and added important new elements.

To understand why both REACH, and hence post-Brexit UK REACH, have the shape they do, one must look back at the origins of the legislation replaced by REACH.

2.1 Early legislation - testing new chemicals

Policy for industrial chemicals as we now know it is an invention of the 1970s. It hardly existed before the start of that decade and by its end many of its concepts had been embodied in legislation and are still relied upon today.

International discussions started within the OECD before the EEC had adopted an environmental policy. EEC legislation, under OECD influence, then placed restrictions on some chemicals and, a little later, prevented a manufacturer from introducing any *new* chemical to the market without first supplying data about its possible harmful effects. Only 25 years later was this concept – now called ‘no data, no market’ – extended to *existing* chemicals by REACH so as to become the key concept of EU chemicals legislation, distinguishing it, for example, from US legislation.⁴

The chemicals industry had been growing rapidly in the 1950s and 1960s. In 1971, realizing that this economically important industry could pose serious risks that were best handled by collaboration between countries, the OECD established a chemicals sub-group of its Environment Committee that it had created the previous year. In 1973 the OECD issued a Decision calling on its member countries to regulate both the use and disposal of PCBs. Contamination of rice oil in Japan with PCBs had harmed humans and killed poultry, and PCBs had contributed to the mass deaths of sea birds in the Irish Sea. A draft French law implementing the OECD Decision then triggered EEC Directive 76/769 on ‘restrictions on marketing and use’ which went further in providing a framework for restricting any existing chemicals known to be harmful, and not just PCBs.

Also in 1973 the EEC’s first Action Programme on the Environment had charged the Commission ‘to investigate controls over chemicals before they are marketed’. This resulted in EEC Directive 79/831 on the pre-notification of new chemicals⁵. The

⁴ ‘No data- no market’ begs the question: how much data? This was a point of contention when REACH was negotiated. It is sometimes misrepresented as ‘reversing the burden of proof’ or ‘placing a duty on the manufacturer to provide proof of safety’. Instead it means that the manufacturer must provide a defined amount of data about harmful effects before marketing is allowed. This data can then be evaluated by public authorities who may demand more data and can place restrictions on sale and use. Responsibility for safety is thus shared between public authorities and industry.

⁵ An account of the development of Directive 79/831 is contained in my book *EEC Environmental Policy and Britain – an essay and a handbook* ENDS 1984. It was based on interviews with DoE, HSE, CIA, CBI, and EEC Commission, as well as conversations with IEEP colleagues in Germany. I know of no other published account.

manufacturer's notification had to be accompanied by an assessment of possible effects on human health and the environment.

In the UK, the concept of 'an early warning system' for chemicals had been put forward in 1972 in two UK reports having very different origins: the Robens Report on 'Health and Safety at Work' ; and the second report of the Royal Commission on Environmental Pollution (RCEP). The RCEP noted that the impact of new products on the environment was one of three topics which had 'frequently arisen' during their enquiries following their first report which it believed 'need to be aired in public'. The Robens report was more specific by recommending that:

"there should be comprehensive powers of control over toxic substances allied to a general statutory obligation on manufacturers to ensure adequate safety testing of new substances before marketing them for industrial use."

Note that the Robens report, when calling for safety testing before marketing, was not concerned with marketing to consumers, nor with public health, but was focused on marketing 'for industrial use'. The health of the workforce was its primary concern. But both it and RCEP had sown the seeds of the 'no data, no market' idea in the UK, even if initially confined to new chemicals.

The debate in the UK therefore coincided with the early work by OECD on chemicals and also with the drafting in late 1972 of the EEC's first Action Programme on the Environment. It also coincided with work in the USA that led to the Toxic Substances Control Act 1976 (TOSCA). The OECD effectively provided a forum for the exchange of views between European and other developed countries such as USA, Canada and Japan. Chemicals policy thus evolved collaboratively: it was not the creation of any one country, nor of the EEC.

The outcome of the Robens report was the Health and Safety at Work etc Act 1974 (HSWA) which created a Health and Safety Commission (HSC)⁶ and an Executive (HSE). The main purpose of the HSWA was to strengthen and bring together existing bodies that regulated safety in the workplace and the risks posed by those affected by work activities. Its guiding idea was that industry and employers should take primary responsibility for safe operation. The HSE was not concerned with the natural environment and it had no powers to restrict chemicals for environmental reasons. Instead, these were provided by the Control of Pollution Act 1974, administered by the DoE (later reinforced by the Environmental Protection Act 1990). Before the creation of the Environment Agency in 1995, the DoE had a unit working on toxic substances with scientific staff including eco-toxicologists.

These two 1974 Acts created an untenable division in the UK between 'safety at work' and 'environmental protection' which had to be overcome once the 1979 EEC Directive on new chemicals came to be implemented. This was conveniently achieved by relying

⁶ The HSC was merged with HSE in 2008. It had a 'tripartite' character with representatives of employer organisations, trade unions and government.

on the European Communities Act 1972 (ECA) which enabled Ministers to make Statutory Instruments (SIs) to implement any EEC legislation. The implementing SI (made under both HSWA and ECA) appointed HSE and DoE jointly as the UK wide competent authority. One can speculate what would have happened had the UK not joined the EEC in 1973.

The ECA removed any motivation to introduce new primary legislation. There was no legal reason to do so, nor was there any political pressure for it. The deficiency in the two 1974 Acts can be explained by the lack of understanding at the time of the full range of the possible effects of chemicals. These came to be seen to encompass many 'receptors' of chemicals (humans within or outside the workplace; animals whether domesticated or wild; vulnerable areas such as enclosed water bodies; contaminated land); many sources of pollution (mining, factories, farms, leaching landfills, transport, food, products in use or upon disposal or when recycled); and many pathways (air, water, land, food) some reaching to remote corners of the world so that chemicals are found even in whales and polar bears. Acute effects were obvious, while chronic effects were less visible. Persistence in the environment of a chemical was soon as much a concern as its toxicity. Most importantly, chemicals policy was a crosscutting issue which rendered unhelpful the usual administrative divisions between protection of workers, of the environment, of consumers, and of public health. The effects of chemicals are long term and long range and so also demand international attention.

It had long been known that some chemicals cause cancers in humans, but the dissemination in 1991 of research by Theo Colborn of WWF (USA) showing that sexual abnormalities and birth defects in wildlife were being caused by chemicals disrupting the endocrine system, greatly increased the prominence of chemicals policy. The implication was that human hormones could also be affected⁷. The evidence not only motivated nature protection organizations to take chemicals policy more seriously⁸, but also underlined the futility of regarding humans as different in this respect from other species of animal. The threat to reproduction and hence the survival of some animal species was clear, and it was no longer unthinkable that the same could apply to humans⁹.

Even if the full importance of chemicals policy was not understood in the 70s, the position at the end of that decade was that the UK had adopted two Acts which proved

⁷ The 'Wingspread Consensus Statement' issued by many scientists in the USA in July 1991 was headed *Chemically-Induced Alterations in Sexual Development: the Wildlife/Human Connection*. EDCs have since been implicated in falling sperm counts in humans as well as an increase in undescended testes in boys and an increase in hormone related cancers in the breast and testes in adults.

⁸ WWF(UK) started a 'Toxics Programme' in 1997 and arranged for Theo Colborn to address the Environment Committee of the European Parliament (EP). Her presentation galvanised the EP into producing an influential 'own initiative' report on EDCs in 1998 which reinforced the growing pressure for a review of EU chemicals policy that began that year and that led to REACH.

⁹ Note the title of an account of Theo Colborn's research written for the non-specialist: *Our Stolen Future: how man-made chemicals are threatening our fertility, intelligence and survival* by T Colborn, J P Myers, D Dumanoski 1996 Little Brown.

defective, and that the EEC had adopted two Directives that were to produce useful results over the next 30 years until replaced by REACH:

- Directive 76/769 on restricting individual existing chemicals known to be harmful. This resulted in restrictions on: asbestos; lead in paint; marine anti-fouling paint; cadmium; fire retardants; carcinogens; creosotes; cements; chlorinated solvents; and many others
- Directive 79/831 on the pre-notification of new chemicals. This resulted in about 3,000 new chemicals being notified, accompanied by data enabling them to be used more safely. Some chemicals being developed were never marketed once testing showed that they might be more harmful than expected – an example of the precautionary principle being applied by manufacturers.

2.2 Testing the thousands of existing chemicals

The two EEC Directives of the 70s still left untested many of the thousands of chemicals on the market. Although some existing chemicals had been restricted under Directive 76/769 these were where harmful effects had become obvious. A way had to be found to assess systematically existing chemicals whose effects were not yet known - what we would now call a precautionary approach. The OECD had issued a Recommendation on the assessment of hazards in 1974¹⁰ and later started a programme involving industry voluntarily assessing chemicals produced in high volumes¹¹. The need for legislation was recognized in the EEC's second Action Programme of 1977, but it took more than 15 years for EC Regulation 793/93, known as the Existing Substances Regulation (ESR), to be adopted in 1993. The difficulty was this: public authorities did not have the capacity to test and assess all chemicals on the market, nor did they know how they were all used; industry had the capacity, but were not motivated to undertake testing, even if required by law, if test results threatened sales. Foot dragging was in their economic interest¹². Manufacturers furthermore did not always know the uses to which their chemicals were put by 'downstream' industrial users and so could not easily conduct risk assessment which depends on knowledge of exposure, which in turn depends on use.

In 1990, in anticipation of ESR, the UK had introduced legislative powers to obtain information from industrialists about harmful effects of existing chemicals. These powers were contained in Section 142 of the Environmental Protection Act 1990, but were never used as the ESR, and subsequently REACH, were directly applicable EC Regulations rather than Directives¹³.

¹⁰ The OECD's work on common assessment methods allowing one country to accept data generated in another included test guidelines, and also principles of good laboratory practice. These were then incorporated into EEC legislation.

¹¹ The OECD programme was confined to hazard assessments, leaving it to the EU and its Member Countries, with their legislative powers, to conduct the more difficult risk assessments needed for making restrictions.

¹² The European chemicals industry had supported EEC legislation on new chemicals because they foresaw different rules in different Member States being more onerous than a single EEC regime, but resisted both the ESR and REACH. See my 1984 and 2016 books (footnotes 5 and 2 above).

¹³ As a member of the UK Chemical Stakeholder Forum, before REACH was adopted, I suggested that DoE should use Section 142 to obtain information from industrialists more quickly than ESR. I was told there were

Under ESR, industrialists were required to supply, initially, only existing information on the effects of the chemicals they manufactured. The Commission then drew up priority lists of those to be assessed. Member States shared the task of assessment and could ask industry for further information. Restrictions could then follow. The failure of the ESR to produce the anticipated results with sufficient speed was the main reason that a review of EU chemicals legislation began in 1998¹⁴. Another reason was that the European Parliament had become sensitized to the need for better controls over EDCs (see footnote 8). The ESR had failed to put enough pressure on industry, so something stronger was needed.

In 2001 the Commission put forward its first ideas for REACH in a White Paper called a *Strategy for a future Chemicals Policy*. This proposed that the ‘no data, no market’ concept be applied to existing chemicals as well as to new ones. The phrase appears as the heading to Article 5 of the adopted text.

REACH was adopted in 2006. It abolished the distinction between ‘new’ and ‘existing’ chemicals and created the European Chemicals Agency (ECHA). It required manufacturers to register with ECHA any chemical they wished to sell. No chemical can legally be sold in the EU without a registration number provided by ECHA. To register a chemical the manufacturer to supply a safety report based on a safety assessment. ECHA conducts completeness checks. Together with the Member States, ECHA conducts ‘substance evaluations’. Among its novel features is an authorization system for chemicals ‘of very high concern’; provisions relating to EDCs; and a requirement that downstream users supply information for the safety assessment.

After Brexit, REACH has now been retained in UK law, with some modifications, by SIs made under the EU (Withdrawal) Act 2018. Given the failure of the UK to achieve some associated relationship with REACH and ECHA, the current UK REACH SIs are understandable interim measures. But it remains a paradox that, despite the claim that one purpose of Brexit was to ‘take back control of our laws’ a key item of chemicals legislation still derives almost wholly from the EU though now in a less efficient and more expensive form. The UK cannot strengthen or significantly change UK REACH except by introducing new primary legislation.

3. The competent authorities needed to implement chemicals legislation

When discussions began on the EEC Directive on new chemicals it was not self-evident what information manufacturers would have to notify, and to whom. Was it to be to an authority at EEC level, or in each Member State?

legal reasons why this could not be done, and DoE obtained Counsel’s opinion to support their position. I did not pursue the matter when it became clear that REACH would soon make Section 142 redundant. The position may be different now that the UK has left the EU.

¹⁴ Reasons for this failure – including the ‘Catch 22’ of ESR - are described in my 2016 book (footnote 1 above). I have never seen any statement that ESR might fail made before it was adopted. ESR was not scrutinized by the UK Parliament.

The Health and Safety Commission (HSC) had been developing its ideas before the EEC formally proposed what became the 1979 new chemicals Directive, and these certainly influenced its form. The DoE also had its own ideas, but these were not made public. In May 1977 HSC had published a *Proposed scheme for notification of the toxic properties of chemicals* but had to abandon it when the Directive was adopted. A comparison subsequently made by HSC noted several important differences, one being that the HSC proposals were designed to assess harm to people in the workplace and those affected by work activity, whereas the Directive also extended to the protection of the natural environment.

The development of the Directive would have been quite different had it not been for legislative activity in the USA and international discussions within the OECD. Preparations for OECD's 1974 Recommendation on the assessment of the environmental effects of chemicals provided a forum for discussions between officials from USA as well as from all 9 EEC Member States, with the lead for UK being taken by DoE.

In June 1976 – one month after the HSC issued their proposed scheme – draft French legislation on pre-market testing was communicated to the Commission. The fact that this was communicated by the French environmental authorities to the Commission's environmental service helped ultimately to strike a distribution of roles rather more favourable to environmental concerns than might otherwise have been achieved.

A working group was then established by the Commission, and this had the effect of linking discussions that were going on in several Member States when these had reached tentative conclusions only in France and, in the UK, within HSE. From then on there was formal liaison between HSE and DoE. The full effect of the US Toxic Substances Control Act 1976 only began to emerge in 1977 following publication of implementing rules by the US Environmental Protection Agency (EPA). Thereafter US legislation became a precedent for some of the problems that arose in the negotiations and as an argument for strengthening environmental aspects of the Directive.

The adopted Directive required the notification of a new chemical, not to the Commission, but to a national authority which then sent it to the Commission, which in turn sent it to the authorities in all other Member States who could consult each other. If no objections were raised within a given period, the manufacturer had assured access to the whole EEC market. The Commission initially had a largely coordinating role. It also maintained three lists which were published in the EEC Official Journal:

1. EINECS (European Inventory of Existing Commercial Chemical Substance) listing all chemicals on the market before 18.9.1981 (about 100,000 were listed although only about 20,000 were in use). The point of EINECS was that any chemical not on the list was deemed to be 'new' and so subject to notification under the Directive.
2. ELINCS (European List of Notified Chemical Substances) – updated periodically.
3. Substances classified as dangerous (under the pre-existing Directive on Classification, Labelling and Packaging).

The UK decided that the role of competent authority for the ‘new chemicals’ Directive was to be exercised by HSE and DoE jointly since HSE had expertise in assessing toxicological effects on humans, and DoE had a unit with eco-toxicologists. Notifications were sent to HSE which forwarded them to DoE.

After the Environment Agency (EA) was created in 1995 the eco-toxicologists at DoE were transferred to the EA. DoE, while formally remaining part of the competent authority, devolved scientific work to EA (thus overcoming the objections by Scotland that the EA’s remit did not extend to Scotland and so it could not itself be a UK wide competent authority). This arrangement continued with the Existing Substances Regulation (ESR).

The national competent authorities met regularly with the Commission to review the working of the Directive. An HSE guidance booklet of 1982 went so far as to say that ‘a notification made to the (UK) competent authority is made to the European Community as a whole, the competent authority in effect acting on behalf of the Community’. These meetings were thus effectively creating an embryonic, albeit virtual, EU chemicals agency.

As the amount of data increased, the Commission created the ‘European Chemicals Bureau’(ECB) in 1993 within its Joint Research Centre (JRC) at Ispra in Italy, to undertake scientific and technical work. From then on notifications were sent to the ECB, which maintained the three lists. It also managed IUCLID (International Uniform Chemicals Information Database). Its functions were not just administrative, since the task of drawing up the priority lists required by ESR involved scientific analysis. The task of risk assessment was then shared out between the Member States. All these functions were transferred to ECHA in Helsinki, which had greatly extended powers, when REACH was adopted.

ECHA thus evolved from a ‘virtual agency’ in 1982; to a ‘bureau’ in Italy (ECB) with limited functions in 1993; to the body we know today (ECHA) in Helsinki. The important point to note is that ECHA is not a free-standing authority equipped with considerable powers but functions together with a number of committees that provide checks and balances. They enable Member States to contribute views and vote on decisions.

The adoption of REACH in 2006 provided the occasion for the UK to reconsider the UK’s competent authority. Although thought was given to the creation of a new UK chemicals agency, DEFRA entered into a contract with HSE to act as a competent authority, with reserve powers for DEFRA. HSE then agreed a Memoranda of Understanding with the EA and with other bodies for them to provide information where they had expertise.

After Brexit, the HSE continues as the authority administering UK REACH.

4. A ‘narrow’ versus a ‘broad’ view of chemicals policy

Policy for chemicals can be regarded **narrowly**: assessing individual chemicals and then restricting use, or **broadly**: covering their whole commercial and environmental life

cycles. Sections 2 and 3 of this submission have described the narrow approach, but it would be a mistake for the UK Strategy to be similarly confined, since effective control of chemicals must involve not just an understanding of their manufacture, sale, use, pathways, receptors, and ultimate fate, but also appropriate controls throughout their pathways.

One consequence of the narrow view is that chemicals policy risks being regarded as a specialist and difficult subject understood by the chemical industry and by toxicologists and only a very few others. It risks being separated, in the mind of the public, not only from the mainstream of environmental policy, but even from the control of pollution of air, water and land. Chemicals policy is best seen as an integral part of pollution policy, differing in being about controlling chemicals before they become waste, unlike traditional air and water pollution policy which are largely about controlling emissions of chemicals in the form of waste. A broader view began to evolve when ‘integrated pollution control’ came to be discussed¹⁵.

In 1976 the RCEP had proposed that pollution control from industrial plants should consider discharges of air and water and the generation of waste together so as to result in the best practicable environmental option¹⁶. Provisions for ‘integrated pollution control’ (IPC) were accordingly introduced into the Environmental Protection Act 1990 under which major industrial processes are given a single authorization to prevent pollution of the environment as a whole whether from emissions to air, water, or in the generation of solid waste. An innovation in the Act (Section 7(8)) was that authorization could include controls on inputs as well as outputs of substances. IPC was intended to stimulate both industrialist and authority to think about optimizing the whole process rather than just adding end-of-pipe solutions. This should result in ‘clean technology’ which should involve substituting dangerous chemicals with safer ones in the process¹⁷.

IPC thus broadened chemicals policy by including control over inputs to major industrial plants. The EA, on its creation in 1995, became not only the body responsible for assessing environmental effects of chemicals, but also that authorized major industrial plants, regulated waste disposal, and was responsible for the quality of rivers. So, when it published its own environmental strategy¹⁸ in 2003 it took a broader view of the subject. Its strategy covered all its regulatory activities involving chemicals.

The Government, in its own chemicals strategy of 1999 was primarily concerned with speeding up the assessment of harmful effects - until its proposals were overtaken by

¹⁵ See Chapter 8 *Integrating Pollution Control* in my 2016 book (footnote 2 above) which follows chapters on air, water, waste and chemicals.

¹⁶ RCEP 5th Report 1976 *Air Pollution Control: An Integrated Approach*. Examples were given of controls over discharges to one medium resulting in increased discharges to another.

¹⁷ Although the authorization could control the output of substances and the generation of solid waste, it could not control the composition of saleable products. A manufacturer, if so inclined, could turn solid waste, contaminated for example with arsenic, into garden gnomes for sale. That would have to be controlled by Trading Standards Officers once someone had identified arsenic in the gnomes.

¹⁸ Environment Agency 2003 *Managing Chemicals for a Better Environment – The Environment Agency’s Strategy*

REACH¹⁹. In other words, its approach was still largely a narrow one, but it did list much UK legislation that dealt with some other controls over chemicals (for example: pollution of air and water, accidents, worker protection, transport, export) without making any attempt to link them together. However, it did not list consumer protection legislation covering safety of products²⁰ nor say much about public health.

In the 1980s discussions had begun within the OECD on what was variously called ‘cross-media’ or ‘multi-media’ or ‘integrated’ pollution control, which brought together experts on water and air pollution and the management of waste. The OECD’s Chemicals Group took a particular interest as its work on the comprehensive risk management of chemicals showed that chemicals could reach vulnerable receptors via all the environmental media. The Chemicals Group accordingly took the lead in the adoption in 1991 of an OECD Council Act on *Integrated Pollution Prevention and Control* ²¹ which gave greater prominence to chemicals policy. A much broader meaning was given to ‘integration’ than IPC in the UK which had been confined to industrial plants. The whole life cycle of chemicals became the integrating theme.

A classic definition of pollution is ‘substances causing damage to targets in the environment’. The substance may travel along pathways through the environment (water, air, land) to reach a target or receptor. Traditional pollution control has focused on the three environmental media through which pollutants travel with separate laws and institutions dealing with each. These institutions evolved their own cultures and often knew little about what other institutions did. An integrated approach effectively requires a shift in focus in ways of thinking. Instead of concentrating on the three media one at a time, it is useful to focus on: ‘*substance*’ ‘*source*’ and ‘*region*’²². The guidance accompanying the OECD Act endorsed this shift in focus ²³.

The OECD Act started with ‘considerata’ one of which read:

considering that in many Member Countries, pollution control efforts focus on each environmental medium separately and that controls over the marketing and use of substances are carried out as separate activities,

It then called on its Member Countries, among other matters:

¹⁹ DETR 1999 *Sustainable production and use of chemicals – a strategic approach. The Government’s Chemicals Strategy*. The creation of the UK Chemicals Stakeholder Forum is one continuing legacy.

²⁰ A much more comprehensive list of UK and EU legislation, with some commentary, had been commissioned by DoE from IEEP: *Legislation for the Control of Chemicals* IEEP 1995. This listed 25 Acts and 7 Government Departments that had some responsibilities for chemicals.

²¹ OECD *Environment Monograph No. 37* 1991

²² Examples of the ‘regions’ envisaged include the Great Lakes between USA and Canada, and confined seas such as the Baltic and North Seas. In a UK context rivers and estuaries can be regarded as a focus of attention. One of the drivers of chemicals policy in Sweden is the desire to protect the Baltic since any persistent chemicals released anywhere in Sweden will eventually end in the Baltic. For Sweden the ‘dilute and disperse’ approach favoured in the UK in the 70s surrounded as it is by turbulent and tidal seas was unthinkable.

²³ This conceptual approach had been developed by the Conservation Foundation (Washington) later merged into WWF(USA). See the book *Integrated Pollution Control in Europe and North America* Eds. Nigel Haigh and Frances Irwin. 1990 The Conservation Foundation (Washington).

*to practice integrated pollution prevention and control, taking into account the effects of activities and substances on the environment as a whole, and the whole commercial and environmental life cycle of substances when assessing the risks they pose and when developing and implementing controls to limit their release*²⁴.

One characteristic of persistent chemicals is their ability to travel long distances through water and air and so to reach remote vulnerable regions and receptors. This led to the adoption of the Stockholm Convention of 2001 on persistent organic pollutants (POPs) which has severely restricted some POPs worldwide.

One effect of the OECD Act was to give an impulse to the adoption five years later of EU Directive 96/61 on integrated permitting of industrial plants (now replaced by the more appropriately named industrial emissions Directive 2010/75) which required the UK IPC regime to be upgraded. But that Directive only covered some ‘sources’ and the number of major industrial plants in the UK has been diminishing for some years. Products are probably the major source of many chemicals including EDCs and were dealt with inadequately in the OECD Act which was adopted before EDCs were generally known about. Emissions of pollutants including EDCs from consumer products can now be said to be a major driver of chemicals policy today, in contrast with the 1970s and 80s.

The RCEP in 2003 insisted on the seriousness of the subject while offering this rather daunting warning:

*Given the inherent uncertainties about the way chemicals interact with the environment, it makes sense to assume that the continuous use of large numbers of synthetic chemicals will lead to serious effects, which we cannot predict on the basis of our current or foreseeable understanding of the processes.*²⁵

No one can pretend that the subject is easy to handle, but it is evident that the Strategy needs to be ambitious if it is to begin to meet the challenge.

5. The visibility of chemicals policy

Chemicals - the Cinderella of environmental policy was the title I gave to a chapter in my 2016 book (see footnote 2). While surveys show that the public have a generalized concern about chemicals there is little understanding of the policy to control them. In order to justify the chapter’s title, I gave five reasons for the subject being so much less well known about than other environmental subjects. Another reason can be given in a UK context: the lack of attention paid by Parliament and Government Ministers. A notable exception was Michael Meacher who, when Minister for the Environment, promoted the

²⁴ For a discussion of the OECD Act and the argument that much EU pollution legislation now falls under the three focuses (substance, source, region) see Chapter 8 *Integrating Pollution Control* in my 2016 book (footnote 2 above)

²⁵ RCEP 25th Report *Chemicals in Products- safeguarding the environment and human health 2003*

1999 UK chemicals strategy (see footnote 20) which now lives on in the UK Chemicals Stakeholder Forum that it created.

The UK Parliament totally ignored Directive 76/769 (restrictions on marketing) and the ESR (existing substances Regulation 793/93) and only the Lords produced a report and debated the new chemicals Directive 79/831 (perhaps because of overlap in membership between the RCEP and the Lords scrutiny committee). Effectively chemicals policy was being left to the EEC/EU. This changed when REACH was proposed. It was so controversial that it prompted an unprecedented joint letter from French President Chirac, German Chancellor Schroder, and Prime Minister Blair to the European Commission warning of the possibly serious effects on the European chemicals industry.

The RCEP having identified chemicals policy in 1972 as worthy of attention (see Section 2.1 above) only returned to the subject some thirty years later. But it did so, not in response to the new issue of EDC's nor to other scientific concerns, but in response to REACH which it criticized quite sharply²⁶. REACH also stimulated reports and debates in both Commons and Lords²⁷. Three major membership NGOs in the UK (WWF, Friends of the Earth, and Greenpeace) contributed significantly to the debate during the REACH negotiations but dropped chemicals as a subject for continuous attention in favour of climate change once REACH was adopted²⁸.

Because of anxieties on what might replace REACH after Brexit, the Commons Environment Audit Committee (EAC) produced its first ever report²⁹ on chemicals (cut short because of the June 2017 general election) and its Chair commented later on how steep the learning curve was that her committee had to climb. Politicians are not sensitized by their constituents about concerns over chemicals in the same way as they are by more easily grasped subjects like sewage in rivers or air pollution. The EAC followed up their first report on chemicals with their 20th report of 2019 *Toxic Chemicals in Everyday Life*.

²⁶ It described REACH as 'more of the presently ineffective approaches'. When reviewing the RCEP's report for the Journal of Environmental Law (JEL vol.16 no.2 2004) I wrote: the RCEP *has jumped into the fray and has pulled a rabbit from a hat. Whether the rabbit is capable of running is a matter on which opinion is divided...* I described the 'rabbit' as a proposal to deal with the backlog of hazard assessments by using new technologies and advances in computational assessment techniques. This approach, which involves identifying molecules with particular physiological properties, has been pioneered in the pharmaceutical industry where it is not unusual to screen a hundred thousand chemicals in one pass. I am not qualified to offer an opinion on whether the rabbit is ever capable of running, but it has yet to do so.

²⁷ House of Lords Select Committee on the EU 13th Report 2001-2. This full report publishes the evidence of many stakeholders much of which remains relevant today. The lack of knowledge by manufacturers of how their chemicals were used was laid bare, as was the large number of chemicals often involved in the manufacture of a single line of product.

²⁸ Arguably REACH would not have been adopted without the pressure from NGOs. One reason that WWF stopped work on chemicals was that protecting human health was outside their remit. WWF then provided the initial finance to create CHEM Trust in 2007, initially with WWF staff.

²⁹ See footnote 2 above

Recent political attention in the UK has been increased by what should replace REACH after Brexit so that paradoxically EU REACH is better known to politicians now that the UK has left the EU than before. This is likely to continue since any divergence from REACH will certainly be questioned and will attract publicity if the UK becomes a dumping ground for chemicals banned in the EU and for which there is no longer an EU market.

One consequence of the low visibility of chemicals policy is that enforcement by Trading Standards Officers (TSOs -employed by local authorities) of products containing hazardous chemicals is a low priority among their competing responsibilities, given their reduced funding, as shown by a survey conducted by CHEM Trust in 2018³⁰. Since that survey the Office for Product Safety and Standards has been created answerable to BEIS.

It goes without saying that chemicals policy is very visible to manufacturers of chemicals and downstream users. UK Chemicals Stakeholder Forum (UKCSF) has proved valuable source of advice for DEFRA and HSE, and information for professionals and stakeholders. The Hazardous Substances Advisory Committee provides scientific advice but neither it nor UKCSF can be said to have much visibility. The commercial success of Chemical Watch shows that there is a demand for information and educational services for industry and professionals. It is probably true to say that chemicals policy is not yet regarded as an essential part of university chemistry courses.

The absence of a UK Chemicals Act coupled with the absence of the word ‘chemicals’ in the name of the UK Agency now administering UK REACH does not contribute to visibility.

6. The case for a new UK Chemicals Agency

A new Chemicals Agency (CA) is needed if the Strategy is to be ambitious enough to take the broad view of chemicals policy already advocated in this submission. It would administer UK REACH, as HSE does today (assessing and restricting chemicals), but would have wider duties and powers. These would include considering the whole commercial and environmental life cycle of chemicals and forming a view of the most serious problems in the long as well as the short term for the human population as well as for the environment. It would use the data publicly available from ECHA and the new data developed in the UK REACH database but would need actively to gather more data. It would publish its findings.

To inform itself of the burden of chemicals within the human population at large, as well as in wildlife, the CA would need to be able to institute and oversee surveillance and bio-monitoring campaigns so as to be able to evaluate the contribution of different sources. It would collaborate with existing and new international bio-monitoring campaigns.

It would need to liaise with other regulatory bodies concerned with the protection of the environment, workers, consumers and public health. The interface between the CA and

³⁰ CHEM Trust 2018 *Local chemical regulation in the UK: fragmented and under-resourced*

these other bodies would need to be carefully defined and managed. As noted in Section 4 above the EA can stimulate substitution of harmful with safer chemicals in the industrial processes it regulates. The CA could enter into a dialogue with the EA to evaluate the extent to which substitution is actually happening. The CA should be a champion for substitution not only in industry but also in consumer products.

It is local authorities that regulate smaller industrial plants and use nuisance laws to protect the public from other sources (dry cleaners for example). The CA would need to obtain information from local authorities and in doing so would make them more conscience of harmful chemicals. It could be given powers to coordinate their work in this field and provide guidance.

A particular focus should be on consumer products now recognized as a major source of chemicals that affect public health. Carcinogens in products have long been a concern, but since the 90s EDCs have been found in many products. Testing of products for harmful substances is a low priority for TSOs. The Office for Product Safety and Standards (OPSS), answerable to BEIS, is fairly new. Neither OPSS nor Public Health England (PHE), answerable to DHSC, focus particularly on chemicals in products and the CA would create pressure and institute joint programmes.

The historical reasons for HSE currently being responsible for administering UK REACH have been described above (in Section 3). The shift in emphasis of chemicals policy over the years from chemicals used in and emitted from the workplace to chemicals in consumer products makes HSE less obviously the base for a chemicals agency. Anyone designing chemicals policy afresh today would not see the HSE as a natural home for it.

The present arrangement for HSE to administer UK REACH is a construct involving a contract under which DEFRA pays HSE to carry out certain functions, and a Memorandum of Understanding between HSE and EA among other bodies to provide HSE with advice. DEFRA can direct HSE if necessary even though HSE in general is not answerable to DEFRA. There are a number of disadvantages to this arrangement, but it can be made to work if chemicals policy is regarded narrowly. It is much less satisfactory if chemicals policy is regarded broadly requiring other powers and duties being laid on HSE which is essentially an industry facing body with an industrial culture. The new CA will have to develop an environmental and public health culture too.

The new CA would be answerable to DEFRA which would have powers to direct it if necessary. Memoranda of Understanding would need to be agreed with bodies having overlapping responsibilities. Just as previous Sections have shown that the assessment of chemicals is a difficult subject that it is best handled by international collaboration, so in the UK it is best handled at UK level, which will also enable making best use of limited resources of expertise. Having a UK wide system is also essential to accommodate the fact that common standards on manufactured chemicals and traded products containing them are needed to preserve the integrity of the UK internal market. Since environmental quality is devolved under the devolution Acts to Scotland, Wales and Northern Ireland, the Devolved Administrations would need to have some role in the

governance of this UK-wide body. Within the UK Government, BEIS and DHSC, would also have a strong interest in how it operated, as well as DEFRA, so the governance should be designed to reflect this too.

When developing its Strategy DEFRA would learn much by studying the Chemicals Agencies that exist in other countries.

7. The case for a UK Chemicals Act

The new Chemicals Agency (CA) proposed in Section 6 above will have to be created by Act of Parliament which must provide the powers to fulfil the functions that the CA would perform. Some of these have been outlined in Section 6.

The reasons why existing UK primary legislation for assessing chemicals is inadequate has been described in Section 2 above. In a word it created an untenable division between worker protection and protection of the environment. Section 142 of EPA 1990 is still in force but is of doubtful use and should be reviewed (see footnote 13).

UK REACH is retained EU law made under the EU Withdrawal Act 2018. It therefore cannot be significantly strengthened or modified, for example to give powers to the CA to institute a bio-monitoring campaign without new primary legislation. I am not aware of legislation empowering the Government to conduct bio-monitoring campaigns beyond those in the Public Health Acts, so these need to be provided³¹.

If the EU decided to strengthen REACH it is quite possible that UK REACH could not be amended to stay aligned without new primary legislation. (This is in contrast with the position in Scotland where the so-called Continuity Act 2021 allows Scotland to stay aligned with evolving EU law.) The paradox would then be that Brexit will have resulted in the UK having legislation (UK REACH) which is a frozen version of out-of-date EU legislation. The UK would not just be following EU law, but out of date EU law, a position to please no ideologue whatever their persuasion. The solution is a new Chemicals Act empowering Ministers to make SIs setting out a scheme for assessing chemicals based on REACH, but broad enough to cover likely changes. The UK can thus stay aligned with the procedures set out in REACH should it wish.

The Act must also be broad enough to cover the possibility of an eventual UK/EU agreement for the UK to be associated with REACH and ECHA, as the UK wanted during the Brexit negotiations. In the meanwhile, HSE (and the new CA) will struggle to keep

³¹ To implement the 1977 EEC 'blood lead screening' Directive 77/321 requiring Member States to conduct two screening campaigns coordinated across the EEC to determine blood lead levels, the participating local authorities relied on the Public Health Act 1936. This gave them powers to inspect their districts for the detection of statutory nuisances. Local authorities participated voluntarily as the Government had no powers to compel them. Two local authorities which took part in the first campaign satisfied themselves that there was no nuisance in their areas and so felt unable to participate in the second campaign. (See the Section on 'Screen for lead' in my 1984 book referenced in footnote 5.) Information gathered in the campaigns resulted in the closure of one lead works, and emergency lead free drinking water supplies had to be arranged in some areas. The information provided pressure for the eventual removal of lead from petrol.

pace with the assessments performed by ECHA, both because it is much smaller, but also because its database is emptier. There is the risk that the UK will fall behind with the result that sale of chemicals are permitted in the UK that are banned from sale in the EU. To prevent EU manufacturers dumping such chemicals onto the UK market - which could cause public concern, possibly even an outcry - it would be desirable for there to be powers to replicate any restrictions made in the EU. One way to achieve this is for the new Act to enable HSE (or new CA) to be able to accept data that has been used by ECHA to restrict a chemical as sufficient to allow it to be restricted in the UK. To avoid the charge that the UK was having its laws made abroad, this could be discretionary. The UK could, but would not have to, follow an EU restriction, but if it did not it would have to face the possible consequential obloquy.

The Act should start by stating certain principles establishing the broad character of chemicals policy. One such is the 'substitution principle' pioneered in Sweden where it appears in their Chemicals Act. The principle means that a safer chemical must be preferred over a more harmful one, where feasible. Another should be 'no data, no market'. A more detailed principle could be 'one substance, one registration' (OSOR), a principle successfully advocated by the UK when REACH was being negotiated.

A new Act would give a powerful signal that chemicals policy has evolved significantly in recent years and is now to be regarded in the UK no longer as a rather narrow technical subject, but broadly as a central part of pollution policy and hence of environmental policy.