UK APPROACH TO REGULATION

The general principles adopted by the UK are that regulatory activities should be carried out in a way which is

- TRANSPARENT
- ACCOUNTABLE
- PROPORTIONATE
- CONSISTENT
- TARGETED ONLY AT CASES IN WHICH ACTION IS NEEDED

8 UK REGULATORY PRINCIPLES

The UK has done extensive work to analyse how to make regulatory activity work better, and some important principles are highlighted here. This work can be important to other countries as a best practice framework.

The UK Government has produced a **Regulators Compliance Code**. The principles and requirements of the Code are applicable to a wide range of regulators, not just environmental. The Environment Agency has included on its web site links to the Code, and Government Code of Practice on Guidance on Regulation:

These general principles adopted by the UK are that regulatory activities should be carried out in a way which is

- transparent
- accountable
- proportionate
- consistent
- targeted only at cases in which action is needed.

The Regulators Compliance Code was introduced in 2007 in response to concerns from business and within government that inflexible or bureaucratic regulatory activity might be contradictory to economic growth, social wellbeing and environmental protection.

The Code at first glance appears to significantly restrict the ability of regulators to do the job they have been set up to do. But in fact the Code provides an excellent business planning template for regulators to ensure that a balanced and proportionate approach is taken in securing essential regulatory outcomes.

The government expects that as regulators integrate the Code's standards into their regulatory culture and processes, they will become more efficient and effective in their work. They will be able to use their resources in a way that gets the most value out of the effort that they make, whilst delivering significant benefits to low risk and compliant businesses through better-focused inspection activity, increased use of advice for businesses, and lower compliance costs.

Further information is provided in the Code of Practice on Guidance on Regulation.

There is also an Environment Agency Position Statement on providing advice and guidance to business.

8.1 BACKGROUND TO THE REGULATORS COMPLIANCE CODE

The UK has a long history of regulation, and business interests have persistently raised concerns about what they see as unnecessary 'red tape', or 'administrative burden' that impedes innovation and profitability, particularly for the majority of businesses that comply with their regulatory requirements. There was concern that regulators were too inflexible in their approach and that much regulatory effort was either unnecessary or untargeted, and that regulators were too remote from, and provided insufficient advice to, the businesses that they regulated.

In 2005 the UK Treasury published a report it had commissioned on the scope for reducing administrative burdens by promoting more efficient approaches to regulatory inspection ▶

THE HAMPTON PRINCIPLES

The Hampton Review set out some key principles that should be consistently applied throughout the regulatory system:

- **regulators, and the regulatory system as a whole, should use comprehensive risk assessment to concentrate resources on the areas that need them most**
- **regulators should be accountable for the efficiency and effectiveness of their activities, while remaining independent in the decisions they take**
- **no inspection should take place without a reason**
- **businesses should not have to give unnecessary information, nor give the same piece of information twice**
- **the few businesses that persistently break regulations should be identified quickly and face proportionate and meaningful sanctions**
- **regulators should provide authoritative, accessible advice easily and cheaply**
- **regulators should be of the right size and scope, and no new regulator should be created where an existing one can do the work**
- **regulators should recognize that a key element of their activity will be to allow, or even encourage, economic progress and only to intervene when there is a clear case for protection.**

and enforcement, without compromising the UK's excellent regulatory standards or outcomes (the Hampton Review).

The review covered all areas of regulation, not just environment. The aim of the review was to reduce administrative burdens on businesses (the cost of being regulated) whilst ensuring that the outcomes of regulation continue to be delivered. A fundamental recommendation was that risk assessment should be at the heart of all regulatory activity. Thus compliant businesses should receive light touch regulation, whilst regulators could pay more attention to poor performers.

The UK Government accepted the review and subsequently introduced a Statutory Code for Regulators – The Regulators Compliance Code, which applies, in full or in part, to all UK regulators, and codifies the principles of good regulation set out in the Hampton Report.

The review found that the current regulatory system imposed too many forms, duplicate information requests and multiple inspections on businesses. Hampton recommended that introducing risk assessment could:

- reduce inspections by up to a third – meaning around one million fewer inspections
- cut the number of forms sent by regulators by almost 25 per cent

The report also stated that risk assessment would help regulators target non-compliant businesses more effectively, and reduce the burden on those businesses that do comply.

8.2 HAMPTON REVIEW

In his final report, Hampton proposed:

- reducing inspections where risks are low, but increasing them where necessary
- making much more use of advice, applying the principle of risk assessment
- substantially reducing the need for form-filling and other regulatory information requirements
- applying tougher and more consistent penalties where necessary
- reducing the number of regulators that businesses deal with from thirty-one to seven
- entrenching reform by requiring all new policies and regulations to consider enforcement, using existing structures wherever possible
- creating a business-led body at the centre of government to drive implementation of the recommendations and challenge departments on their regulatory performance

As a result of this final recommendation, the government created a Better Regulation Executive (BRE) to oversee the reduction of regulatory burdens on business, and hold government departments and regulators to account. The government's response to the recommendations can be seen in 'Implementing Hampton: from enforcement to compliance'.

The UK Government and BRE continue to implement the Hampton principles through the work of the Improving Regulatory Delivery Team. Updates on progress are published on the Department for Business, Innovation and Skills (BIS) web site at http://www.bis.gov.uk/policies/bre/improving-regulatory-delivery

8.3 REGULATORY SANCTIONS AND ENFORCEMENT

In parallel with the Hampton Review the UK government was also looking at the effectiveness of regulatory sanctions and commissioned Prof. Richard Macrory to prepare a report on Regulatory Justice: Making Sanctions Effective (The Macrory Review). See http://www.bis.gov.uk/files/file44593.pdf

The Macrory Review made several wide-ranging recommendations for legislative and policy reform, many of which the UK Government accepted, in particular the introduction of Civil Penalties in the Regulatory Enforcement and Sanctions Act 2008. A web link to the Act is provided at: http://www.legislation.gov.uk/ukpga/2008/13/contents

Key recommendations from the Macrory Review, which are largely included in the Regulators Compliance Code, were that in designing the appropriate sanctioning regimes for regulatory non-compliance, regulators should have regard to the following six Penalties Principles and seven characteristics:

MACRORY REVIEW – ENFORCEMENT AND SANCTIONS

Six Penalties Principles

A sanction should:

1. **Aim to change the behaviour of the offender.**
2. **Aim to eliminate any financial gain or benefit from non-compliance.**
3. **Be responsive and consider what is appropriate for the particular offender and regulatory issue, which can include punishment and the public stigma that should be associated with a criminal conviction.**
4. **Be proportionate to the nature of the offence and the harm caused.**
5. **Aim to restore the harm caused by regulatory non-compliance, where appropriate.**
6. **Aim to deter future non-compliance.**

Seven characteristics

Regulators should:

1. **Publish an enforcement policy.**
2. **Measure outcomes not just outputs.**
3. **Justify their choice of enforcement actions year on year to stakeholders, Ministers and Parliament.**
4. **Follow-up enforcement actions where appropriate.**
5. **Enforce in a transparent manner.**
6. **Be transparent in the way in which they apply and determine administrative penalties.**
7. **Avoid perverse incentives that might influence the choice of sanctioning response.**

Details of the civil sanctions currently available to the Environment Agency are discussed in Chapter 25.

9 REGULATORY APPROACHES AND OPTIONS – THE TOOLBOX

The focus of regulatory interventions of whatever form should be to achieve a desired environmental outcome, generally that all the Principles of environmental legislation are fulfilled.

This can be summarised for water as achieving the target Status or Class for the water body. The options available are summarised in Figure 9.1.

Traditionally, point source industrial and sewage discharges to water, ie via a pipe or channel, have been dealt with by Direct Regulation. A risk-based approach is used focussing on the hazard that the activity presents to the environment, the likelihood of it happening and the consequences should it happen.

For the highest risk, or most complex discharges, bespoke permits are required, tailored to the individual circumstances of the discharge and receiving water.

For less risky discharges, typically those with high dilution available and low complexity, such as small < 20 m³ / day sewage works, standard permits

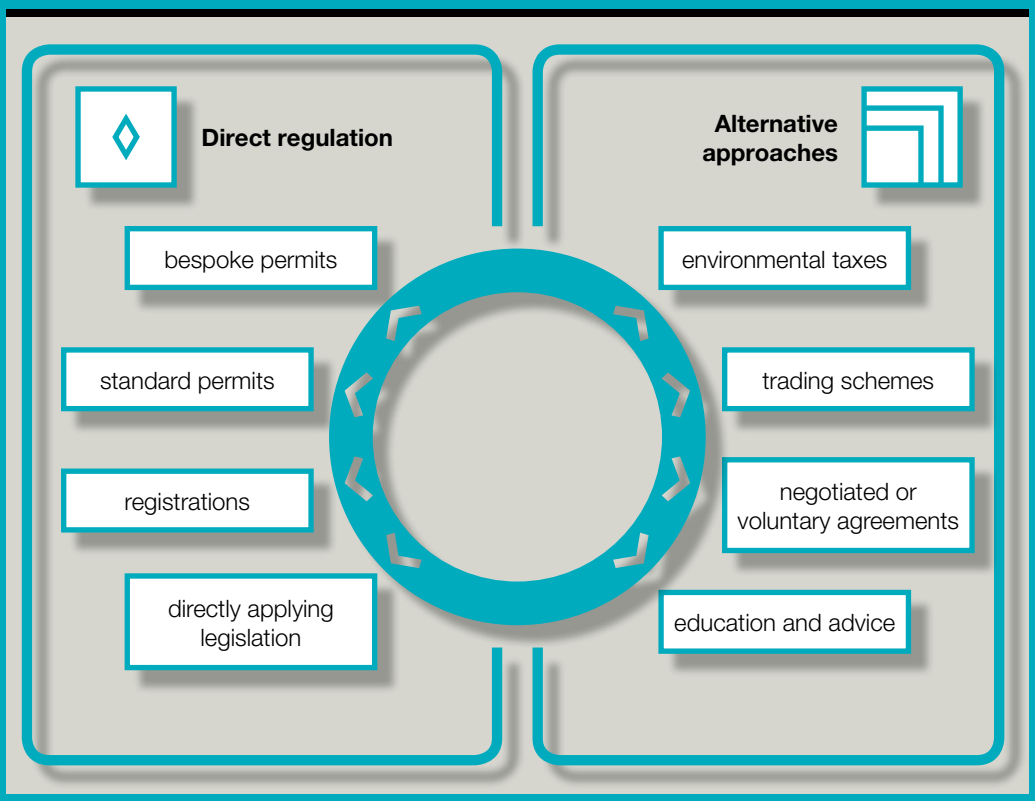


Figure 9.1 Regulatory approaches to achieve desired environmental outcomes

From Delivering for the Environment, EA 2005

can be produced where the regulator establishes a generic risk assessment, and similar permit conditions apply to all qualifying discharges, which then attract a lower charge than a bespoke permit.

For small discharges that require ongoing maintenance, e.g small domestic sewage works serving only one or a few properties, registration may be used, where the operator notifies the regulator of the discharge and in so doing agrees to comply with a set of standard obligations set out in the registration requirements. There may be a one-off administrative charge or registrations may be renewable.

Finally the law may apply directly. Typically this is either via prohibitions in primary legislation, e.g. prohibition on discharging inflammable liquids to sewer, or by generally binding rules set out in Regulations, e.g. requirements in the Scottish Controlled Activities Regulations for sustainable drainage systems (SuDS) at all new development sites.

Diffuse polluting inputs from these and other sources have been largely unregulated, and addressing them requires alternative approaches such as environmental taxation, education and voluntary initiatives. A threat of financial sanction, or, more positively, a financial inducement to move in the right direction for environmental protection and improvement, generally stimulates innovation towards securing the desired outcome. Public awareness and participation in addressing local diffuse pollution problems can be very effective in securing good environmental behaviours from land users. This issue is discussed further in Chapters 22 and 26.

The Environment Agency has addressed much of the above in its booklet 'Delivering for the Environment – A 21st Century Approach to Regulation'. It is available on request from the Publications section of the Environment Agency Web Site. ■

10 DIRECTIVE GUIDANCE

For complex legislation such as the Water Framework Directive (WFD) or the Integrated Pollution Prevention and Control Directive (IPPC) and the Industrial Emissions Directive (IED), the European Commission and Member States have recognised that centralised guidance is needed to help Member States interpret their obligations and to deliver the intended outcomes.

The following sections outline the nature of EU–level guidance that is available in the public domain, mostly via the internet. Key web sites and documents are also signposted as embedded links to relevant web sites. Important references are included as hyperlinks to .pdf files.

10.1 COMMON IMPLEMENTATION STRATEGY FOR WATER FRAMEWORK DIRECTIVE

For the Water Framework Directive, the Member States and European Commission established a Common Implementation Strategy, (CIS) in 2001, addressing some of the issues where a common approach across Member States is essential in order to prevent market distortion, or where the legal obligation or scientific definitions need further development or clarification. The initiating Common Implementation Strategy document can be found at the following link: http://ec.europa.eu/environment/water/water-framework/objectives/implementation_en.htm

The aim of the CIS was, and is, to allow, as far as possible, a coherent and harmonious implementation of the Water Framework Directive. Most of the challenges and difficulties arising were recognised to be common to all Member States. Many of the European river basins are shared, crossing administrative and territorial borders, where a common understanding and approach is crucial to successful and effective implementation. A Common Strategy was recognised as limiting the risks of bad application of the Directive and subsequent disputes.

The focus is on methodological questions related to a common understanding of the technical and scientific implications of the Water Framework Directive. The aim has been to clarify and develop, where appropriate, supporting technical and scientific information to assist in the practical implementation of the Directive. Guidance documents, providing advice on operational methods, have been developed for this purpose. However, such documents have an informal and non-legally binding character and are placed at the disposal of Member States who wish to use them on a voluntary basis.

The guidance documents produced in the frame of the joint Strategy were seen as forming the basis for guidelines, which could be adopted under the Committee procedure for amendment to the Directive. The process established within the joint Strategy could therefore partly be seen as an informal preparation for the Committee procedure for some specific areas.

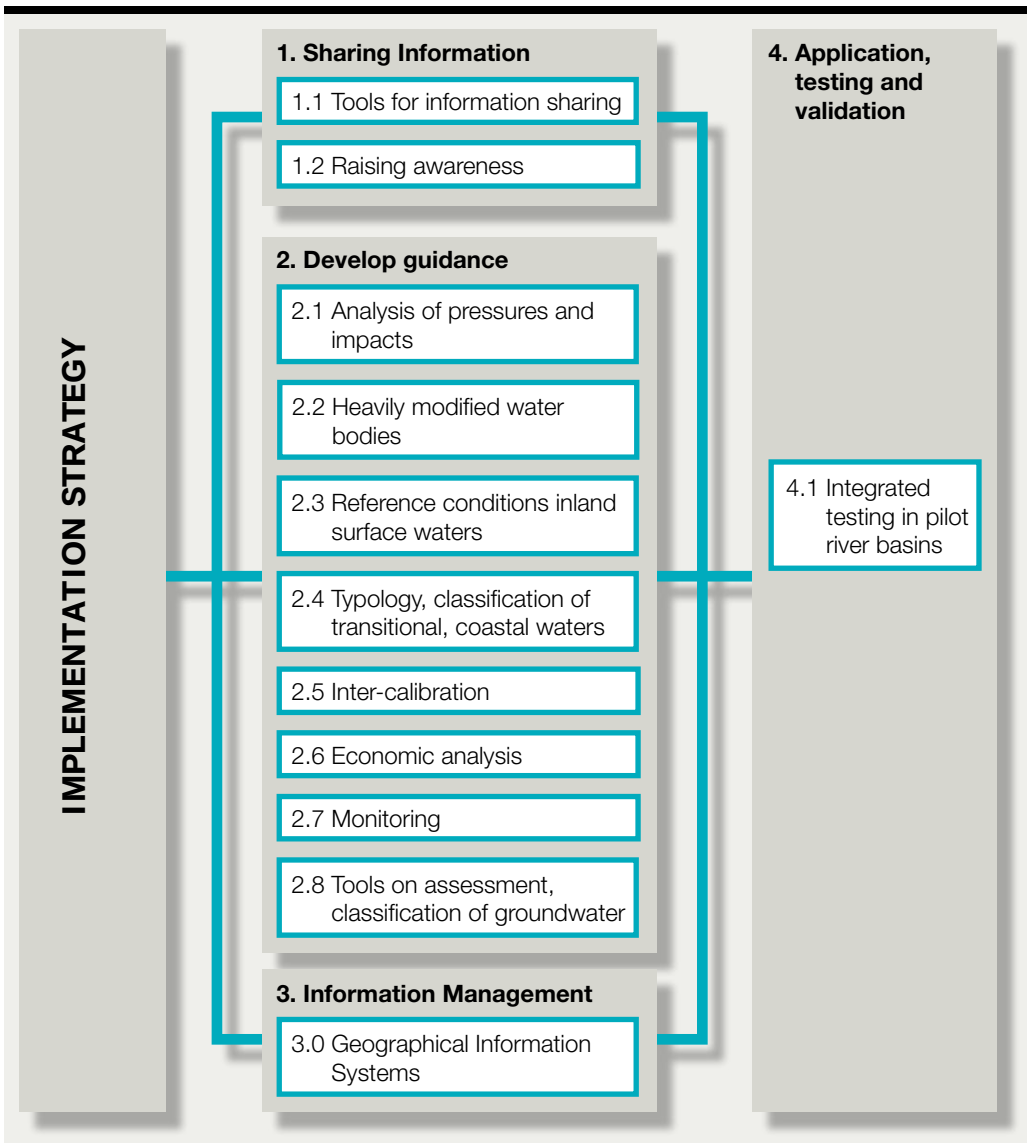


Figure 10.1 Common Implementation Strategy

The following elements were identified for a Common Strategy for the implementation of the Water Framework Directive:

- The necessity to **share information** between Member States and the European Commission. The need to inform and involve **the public and promote public awareness of** the key elements of the WFD and issues linked to its implementation.
- The need to ensure **coherence** between the implementation of the WFD and **other sectoral and structural policies**.
- The need to ensure **coherence** between the implementation of the WFD, other water Directives and process and product oriented Directives.
- The need to **integrate activities** on different horizontal issues for the effective development of river basin management plans and implementation of the WFD.
- The need for **capacity building** in Member States for an effective implementation of the WFD.
- The need to involve **stakeholders and the civil society** in the implementation of the WFD.
- The need to promote a **common attitude** towards Candidate Countries of Central and Eastern Europe regarding their possible involvement in activities (this is key for shared international river basin districts).

- The need to establish **working groups** and develop **informal guiding and supporting documents** on key aspects of the WFD.

Working groups were established on different issues for which common activities were deemed to be necessary. These include groundwater, reference conditions, heavily modified water bodies, economics, limits and definition of river basins, methods for the development of river basins management plans, public and stakeholder participation, 'significance' levels/thresholds, monitoring and the development of a shared structure for Geographic Information Systems (GIS).

Figure 10.1 shows the links between the horizontal and vertical activities and outlines the guidance documents developed to assist in the implementation of the WFD.

10.2 IPPC & IED DIRECTIVE GUIDANCE

Industrial production processes account for a considerable share of the overall pollution in Europe (pollutants such as greenhouse gases, acidifying substances, wastewater emissions and waste). The EU has a set of common rules for licensing and controlling industrial installations in the IPPC Directive of 1996.

In essence this Directive is about preventing, and when this is not

Completed, draft and planned BREF Notes and Executive Summaries of BREF Notes are currently available on the European IPPC Bureau web site for the following Sectors:

Best Available Techniques Reference Document (BREFs)	Code	Adopted Document	Formal draft (*)	Meeting report	Estimated review start
Ceramic Manufacturing Industry	CER	BREF (08.2007)			
Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Sector	CWW	BREF (02.2003)	D2 (07.2011)	MR (06.2008)	
Emissions from Storage	EFS	BREF (07.2006)			
Energy Efficiency	ENE	BREF (02.2009)			
Ferrous Metals Processing Industry	FMP	BREF (12.2001)			Review on hold
Food, Drink and Milk Industries	FDM	BREF (08.2006)			2014
Industrial Cooling Systems	ICS	BREF (12.2001)			
Intensive Rearing of Poultry and Pigs	IRPP	BREF (07.2003)	D2 (08.2013)	MR (06.2009)	
Iron and Steel Production	IS	BATC (03.2012) BREF (03.2012)			
Large Combustion Plants	LCP	BREF (07.2006)	D1 (06.2013)	MR (10.2011)	
Large Volume Inorganic Chemicals – Ammonia, Acids and Fertilisers Industries	LVIC-AAF	BREF (08.2007)			
Large Volume Inorganic Chemicals – Solids and Others Industry	LVIC-S	BREF (08.2007)			
Large Volume Organic Chemical Industry	LVOC	BREF (02.2003)		MR (12.2010)	
Management of Tailings and Waste-rock in Mining Activities	MTWR	BREF (01.2009)			
Manufacture of Glass	GLS	BATC (03.2012) BREF (03.2012)			
Manufacture of Organic Fine Chemicals	OFC	BREF (08.2006)			
Non-ferrous Metals Industries	NFM	BREF (12.2001)	D3 (02.2013)	MR (09.2007)	
Production of Cement, Lime and Magnesium Oxide	CLM	BATC (04.2013) BREF (04.2013)			
Production of Chlor-alkali	CAK	BREF (12.2001)	FD (04.2013)	MR (09.2009)	
Production of Polymers	POL	BREF (08.2007)			
Pulp and Paper Industry	PP	BREF (12.2001)	FD (07.2013)	MR (11.2006)	
Production of Speciality Inorganic Chemicals	SIC	BREF (08.2007)			
Refining of Mineral Oil and Gas	REF	BREF (02.2003)	FD (07.2013)	MR (09.2008)	
Slaughterhouses and Animals By-products Industries	SA	BREF (05.2005)			
Smitheries and Foundries Industry	SF	BREF (05.2005)			
Surface Treatment of Metals and Plastics	STM	BREF (08.2006)			
Surface Treatment Using Organic Solvents	STS	BREF (08.2007)			2014
Tanning of Hides and Skins	TAN	BATC (02.2013) BREF (02.2013)			
Textiles Industry	TXT	BREF (07.2003)			
Waste Incineration	WI	BREF (08.2006)			2014
Waste Treatments Industries	WT	BREF (08.2006)			Review started
Wood-based Panels Production	WBP	-	D1 (07.2013)	MR (11.2011)	
Wood and Wood Products Preservation with Chemicals	WPC	-			2014
Reference Document (REFs)	**Code**	**Adopted Document**	**Formal draft (*)**	**Meeting report**	**Estimated review start**
Economics and Cross-media Effects	ECM	REF (07.2006)			
Monitoring of emissions from IED-installations	ROM	REF (07.2003)	FD (10.2013)		

possible, minimising pollution from various industrial sources throughout the European Union, and achieving integrated control of their emissions, consumption of energy, water and raw materials. About 50,000 installations in the EU are involved and their operators have to obtain an authorisation (environmental permit).

The IPPC Directive (Directive 2008/1/EC) which limits pollution to all media (land, water and air) from major industries has been updated by the Directive on industrial emissions 2010/75/EU (IED). Transposition into Member State law was scheduled to have been completed by January 2013. There is currently a transition phase between the requirements of IPPC and IED. Details of both Directives, and the development of guidance for IED, are available on the European Commission's web site: http://ec.europa.eu/environment/air/pollutants/stationary/index.htm

For IPPC and IED the Commission has established BAT Reference Notes (BREF Notes) which describe the techniques and technologies likely to be acceptable to regulators as indicative Best Available Techniques (BAT) for the reduction of pollution from the industrial sectors subject to the Directive. These serve as a reference for EU Member States' authorities to ensure that permits for the industrial processes concerned include emission limit values based on best available techniques that have been determined by working groups encompassing experts from industry and national administrations.

The IPPC BREF Notes are continually being revised to include developments in knowledge and techniques. Additionally, the requirements of the IED are being incorporated. The European Commission has issued a Commission Implementing Decision (2012/119/EU) specifying the requirements for drawing up and reviewing BAT Reference Documents (BREFs).

The BREF Notes and reviews are coordinated and, after sanction by the Commission, published by the European IPPC Bureau. The European Integrated Pollution Prevention and Control (IPPC) Bureau is located in the Institute for Prospective Technological Studies (IPTS). ■

11 RIVER BASIN PLANNING AND DEVELOPMENT OF THE EU WATER FRAMEWORK DIRECTIVE PROGRAMMES OF MEASURES

The Water Framework Directive (WFD) provides the strategic planning framework for water management across Europe. Regulation in all forms is the key mechanism for implementing the Directive and is brought into force in accordance with the river basin plans and the integral programmes of measures.

11.1 WFD PLANNING CYCLE

The interaction of the planning cycle with the programmes of measures is shown in Figure 11.1 and follows a six year cycle, repeated over three cycles. The timetable for action is included in Table 11.1.

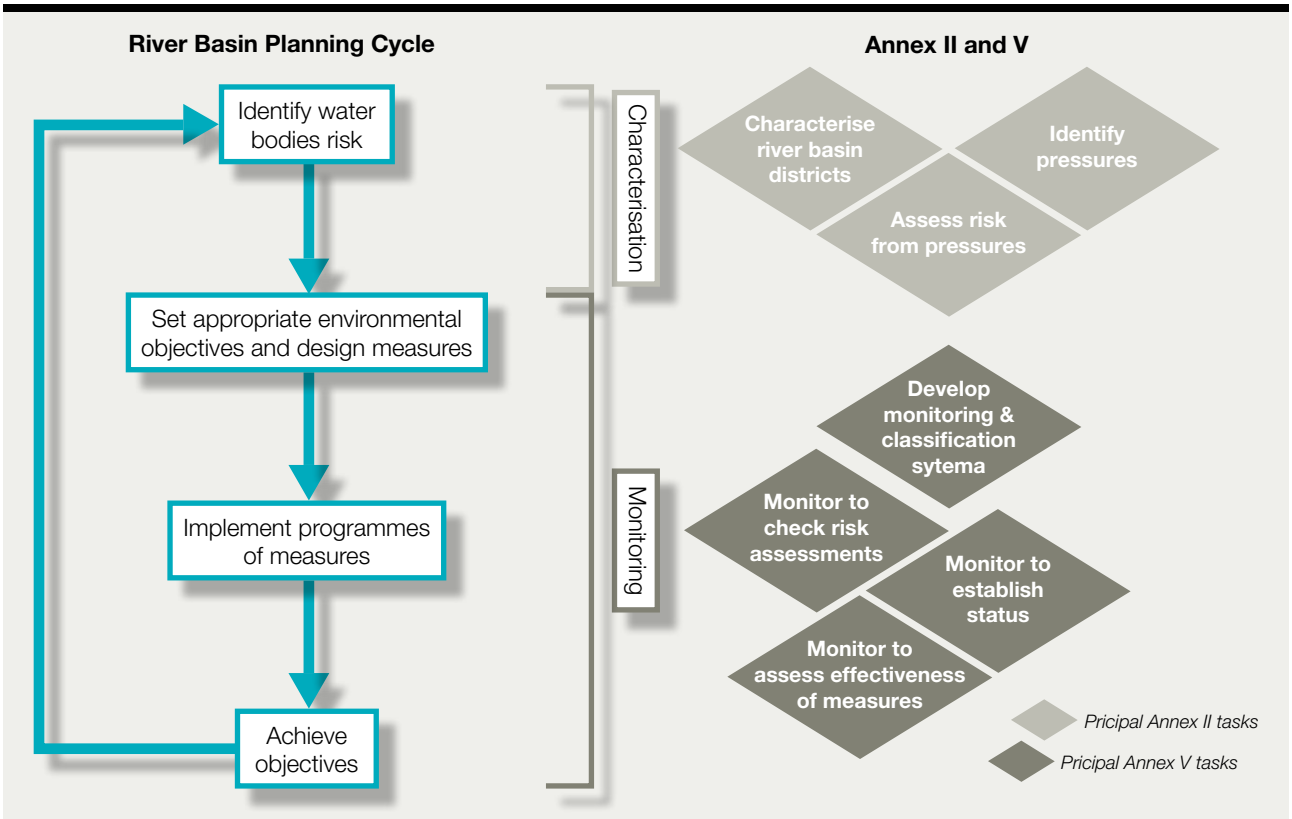


Figure 11.1 Relationship between river basin planning, monitoring and the programmes of measures

Source - Scottish Environmental Protection Agency (SEPA), 2002, Future for Scotland's Waters

TABLE 11.1 WATER FRAMEWORK DIRECTIVE TIMETABLE (ADAPTED FROM FOUNDATION FOR WATER RESEARCH)

Complete action by year end	Action Required	EU Directive Articles	Overview
2000	**Water Framework Directive entered into force**	**Article 22** **Article 25**	**3 years for Member States to prepare**
2003	• **Transpose requirements to national legislation** • Define River Basin Districts and Authorities	**Article 23** Article 3	
2004	Characterise river basins: pressures, impact and economic analysis	Article 5	**6 years to analyse issues and prepare the River Basin Management Plans**
2005	**Identify significant trends in groundwater pollution**	**Article 17**	
2006	• **Establish environmental monitoring programmes** • **Publish and consult on a work programme for the production of the first River Basin Management Plans** (RBMPs) • **Establish environmental quality standards** (EQSs) for surface water	**Article 8** **Article 14** **Article 16**	
2007	• Report monitoring programmes to the EC • **Publish and consult on summary of significant water management issues** (SWMI) for each River Basin District	Article 14	
2008	Publish and consult on drafts of the RBMPs	Article 14	
2009	• Publish the first RBMP for each River Basin District • **Establish programmes of measures** (PoMs) in each River Basin District in order to deliver environmental objectives	Article 13 **Article 11**	
2010	• Report RBMPs, including PoMs to the EC • **Introduce water pricing policies**	Article 9	**3 years to put programmes of measures in place**
2012	• **Ensure all POMs are fully operational** • Report progress in implementing the first RBMPs	**Article 11** Article 15	
2013	**Review progress of the first RBMP cycle**		**3 years to achieve specified objectives**
2015	Main environmental objectives specified in the first RBMPs met?	Article 4	
2015	**Review and update first RBMPs**	**Articles 13, 14 and 15**	**Further 6 years' planning, consultation and implementation cycles**
2021	• Main environmental objectives specified in the second RBMPs met? • **Review and update second RBMPs**	Article 4 **Articles 13, 14 and 15**	**Further 6 years' planning, consultation and implementation cycles**
2027	• Main environmental objectives specified in the third RBMPs met? • **Review and update third RBMPs**	Article 4 **Articles 13, 14 and 15**	

The aim of the Water Framework Directive is that over time the status of no water body shall deteriorate, and that all natural surface water bodies shall meet at least Good Status and artificial water bodies shall meet Good Potential.

11.2 WFD TIMETABLE

The EU WFD set a clear timetable for action across Europe which is given in Table 11.1.

The key elements relating to planning and evaluation of regulatory options are in the green area of the table. Implementing improvements through regulatory actions are generally in the orange area and form the programme of measures. The WFD allows for three planning rounds based upon six year cycles; the review and planning for the second and third rounds is shown in blue. This allows for a pragmatic approach with stepwise improvement to meet the agreed objectives.

11.3 WFD PROGRAMME OF MEASURES

Having carried out monitoring to determine the status of the water bodies within a River Basin District, Member States must then use this information to develop an integrated Programme of Measures (or improvement programme) to meet the environmental objectives, in particular that of 'good water status' within the river basin.

These options are developed as part of the River Basin Management Planning process and the final plan sets out the Programme of Measures and the regulatory interventions that will take place to achieve the agreed objectives for each waterbody.

The Water Framework Directive allows for a combination of regulatory options to achieve the agreed objectives. Note this is a similar approach to the UK Regulatory Options – The Toolbox which was presented in Chapter 9 and summarised in Figure 9.1.

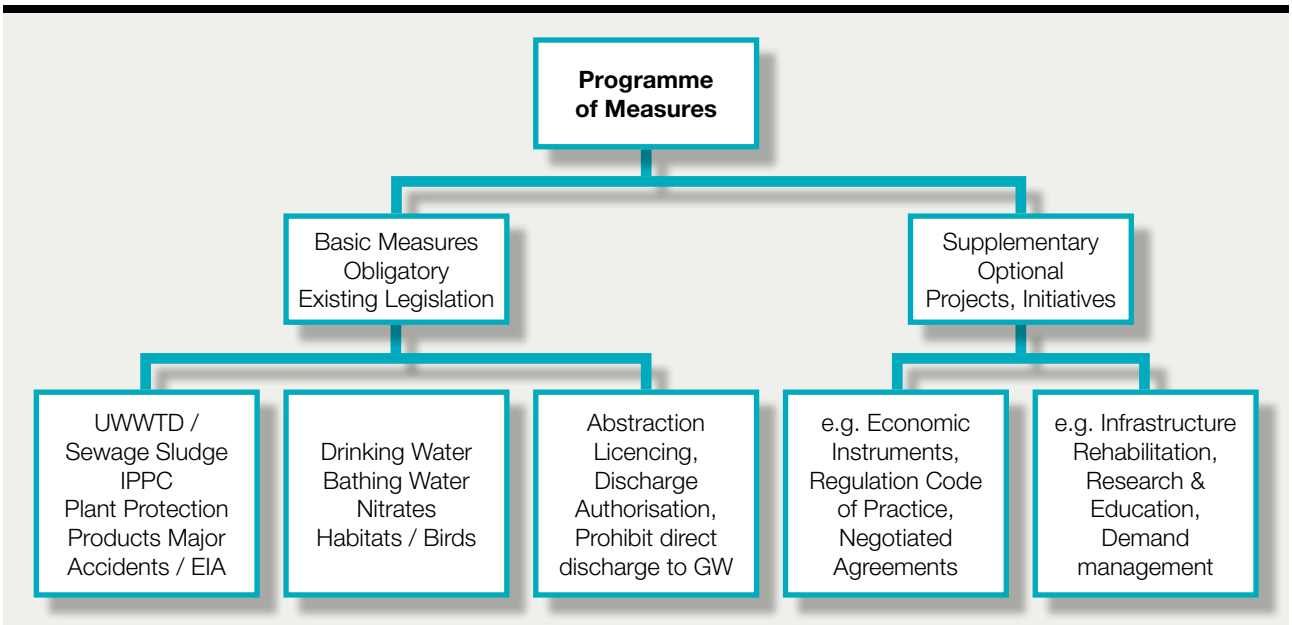
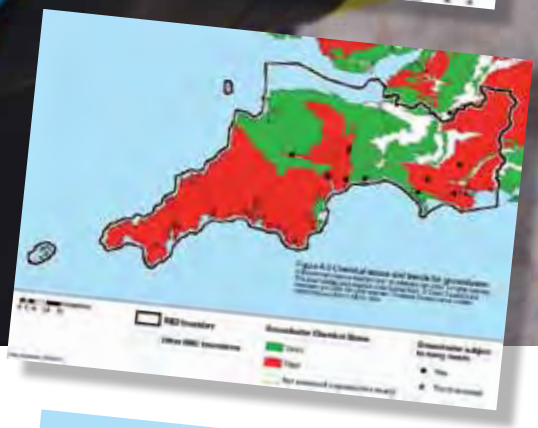
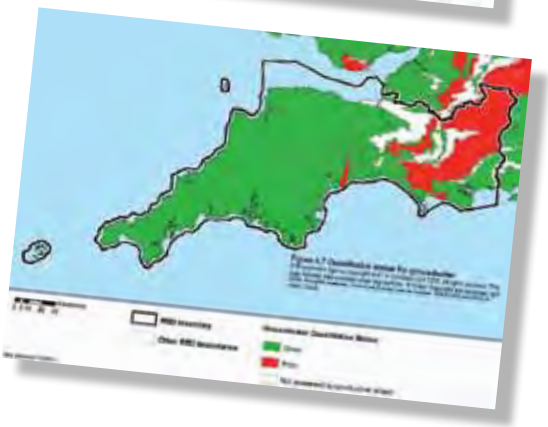


Figure 11.2 Structure of Programme of Measures





The EU WFD separates these into basic and supplementary measures.

The compulsory **basic measures** include meeting the requirements of other relevant Directives and the licensing of discharges and abstraction. Where necessary these are complemented by **supplementary measures**, if the basic measures are not sufficient to meet the environmental objectives. Supplementary measures are set out in an Annex to the Directive as a non-exhaustive list of potential initiatives for improving water status, ranging from economic instruments to negotiated agreements to rehabilitation projects and Research and Development. Figure 11.2 sets out the requirements of the Programme of Measures in diagrammatic form.

Member States are assessed against implementation of the agreed programme of measures.

A good understanding of the availability of regulatory options (permits, licences, etc.) and non-regulatory options (voluntary agreements, partnerships, education, taxes, etc.) is essential to ensure the objectives of the WFD are met and maintained.

12 NATIONAL MECHANISMS FOR ACHIEVING WATER QUALITY OUTCOMES

To achieve desired water quality outcomes the following approaches are needed:

- good strategic planning;
- good design and detail planning;
- good construction;
- good operation;
- good maintenance;
- good management;
- and a high level of transparency throughout;.

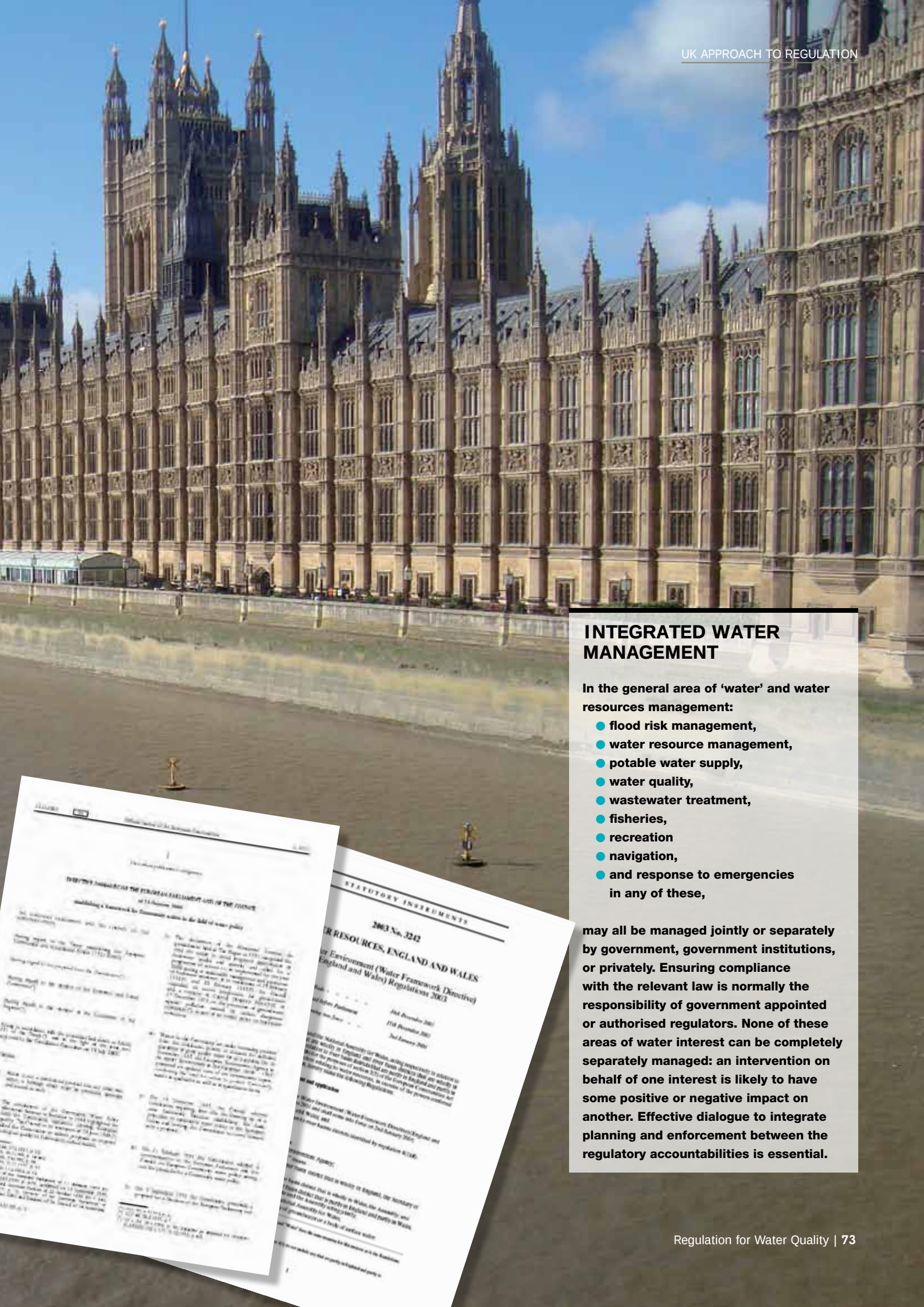
They all contribute to reducing the amount of prescriptive regulation needed to control the impact of potentially harmful activities.

It is essential to communicate clearly the need, and benefits of these good practices to all stakeholders so that interventive regulation can be minimised.

12.1 TRANSPOSITION AND IMPLEMENTATION INTO MEMBER STATE LAW

Member States have to transpose EU law into national law, but the detailed mechanisms for delivery of the water quality outcomes required by the EU law can legitimately vary from Member State to Member State. However, there are a few common principles:

- Serious environmental offences must be subject to national criminal law and sanctions, - a requirement of the 2008 Directive on Protection of the Environment through Criminal Law.
- Environmental information shall be generally made available to the public, in accordance with the 2003 Directive on Public Access to Information.
- Transposition and implementation information shall be reported by Member States to the Commission and the Commission reports in summary to the European Parliament and Council.



INTEGRATED WATER MANAGEMENT

In the general area of 'water' and water resources management:

- **flood risk management,**
- **water resource management,**
- **potable water supply,**
- **water quality,**
- **wastewater treatment,**
- **fisheries,**
- **recreation**
- **navigation,**
- **and response to emergencies in any of these,**

may all be managed jointly or separately by government, government institutions, or privately. Ensuring compliance with the relevant law is normally the responsibility of government appointed or authorised regulators. None of these areas of water interest can be completely separately managed: an intervention on behalf of one interest is likely to have some positive or negative impact on another. Effective dialogue to integrate planning and enforcement between the regulatory accountabilities is essential.

In general the European Commission focuses attention initially on transposition of Directive requirements into national law, and then on implementation activity and reporting progress. It does not analyse and report the details of delivery mechanisms adopted by Member States. Additionally there is a mechanism via the European Ombudsman for individual citizens to register a complaint with the Commission if they believe that a Directive is not being implemented properly by their government. Although the ability of citizens to engage is a fundamental principle, experience shows that the number and type of interventions is manageable, and becomes more manageable as trust develops.

Member States can decide on the extent to which delivery of effective regulation can be centrally controlled, i.e. directly by central government ministries, or devolved from central government to executive agencies or to regional or local government offices, or by a combination of any of these. Given the diversity of size, geographies, legal systems and institutional mechanisms in Member States there is no 'one size fits all' approach to EU Directive implementation. For individual outcomes specified in EU law, Member States may have a variety of criminal and civil law mechanisms and delivery bodies to ensure the intended Directive outcome is achieved.

Details of Member State governance systems for water are not generally available in English, so this book focuses on UK approaches. Limited analysis of some Member States' environmental law and governance systems have been included in IMPEL and OECD publications: IMPEL – Reference Book on Inspections 1999; IMPEL - Doing the Right Thing – Step By Step Guidance Book for Planning of Environmental Inspection; and OECD – Water Governance in OECD Countries a Multi-Level Approach.

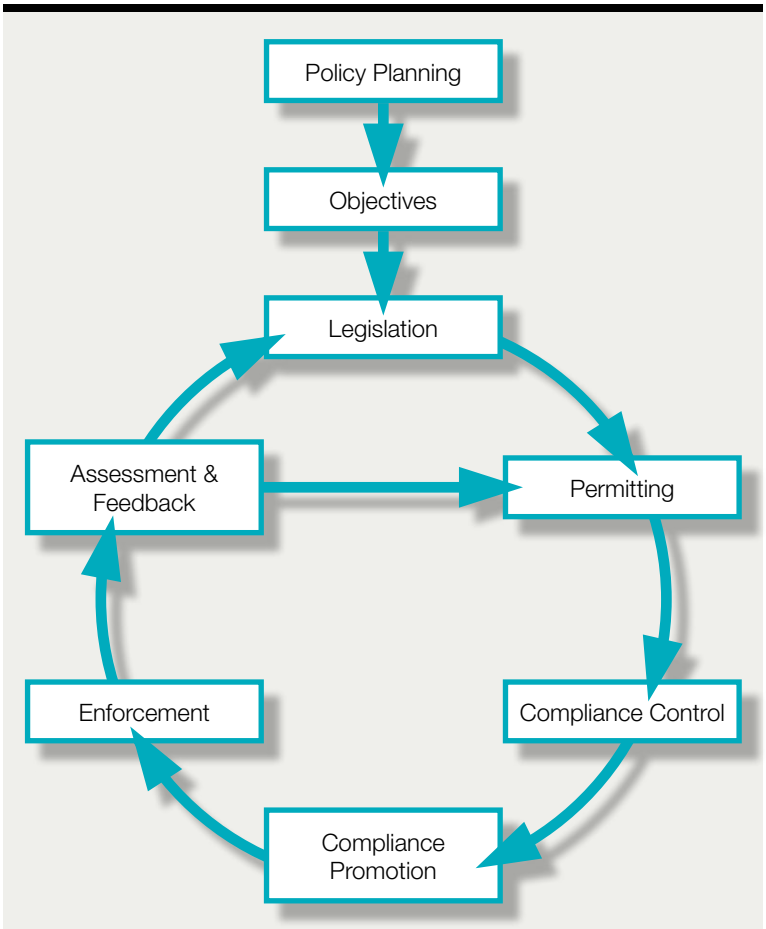


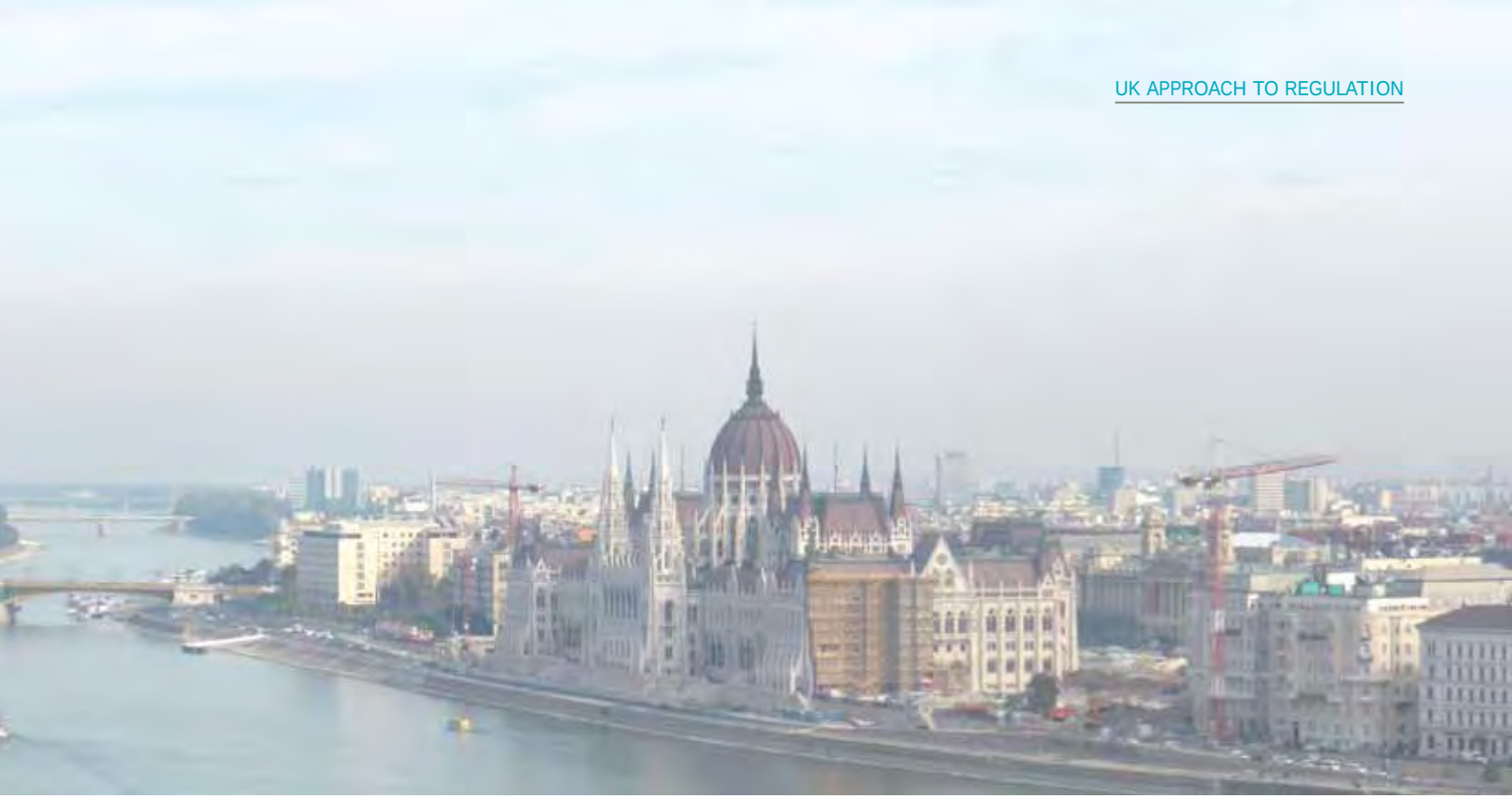
Figure 12.1 The Regulatory Cycle *(from IMPEL Environmental Inspectors Handbook 1999)*

12.2 EU-LEVEL REGULATORY GUIDANCE FROM IMPEL

The IMPEL Environmental Inspectors Reference Book describes a 'Regulatory Cycle' identifying the key steps from policy to implementation. This includes the political policy and objective setting process, development of legislation, permitting, compliance control, compliance promotion, enforcement, and assessment and feedback. The Regulatory cycle is shown in Figure 12.1.

12.3 THE INSPECTION CYCLE

The Inspection cycle is shown in Figure 12.2 below, and is a variant or element of the Planning cycle described in Chapter 2. Full details of the stages of the cycle are provided in: IMPEL - Doing it right 2 –



step by step Guidance for Planning of Environmental Inspection).

Both of the IMPEL reports (referred to in this and an earlier sub-section) contain a wealth of information on the strategic planning and tactical delivery of environmental inspection, which although focused on effective techniques for inspection staff, provide an excellent reference base for policy makers and administrators.

Figure 12.2 The Inspection Cycle *(from IMPEL - Doing It Right 2 – Step by Step Guidance for Planning of Environmental Inspection*

12.4 ACHIEVING DIRECTIVE OUTCOMES

Implementation of Directives by Member States requires not only transposition of legal requirements into national law, but also an effective delivery system to ensure that the objectives of the Directive are demonstrably met. The strategic and detail planning of delivery is an essential responsibility of governments and their delivery agents.

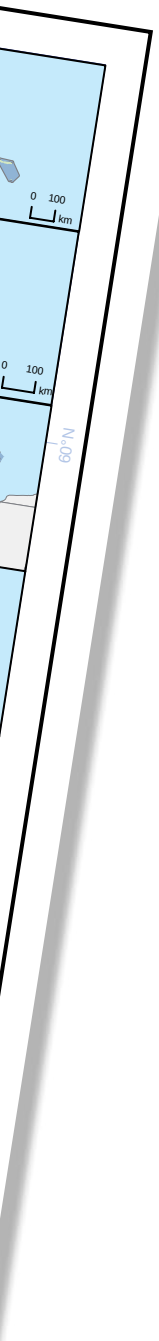
It is at this early stage of implementation that options for achievement of objectives in the most timely and cost effective way can best be considered. Policy decisions may be broad-brush or focused on individual activities. They may involve taxation, levies, charges, permits, registrations or prohibitions, all of which may be underpinned by criminal and/or civil sanctions. And education, research, public awareness and special interest groups all have a part to play.

As an example, where the Directive obligation affects new development, a broad-brush policy decision may be made inserting a simple rule in the development planning framework, affecting all development – placing the obligation to comply with the Directive firmly on all developers. Alternatively a more focussed and cost-effective approach may be necessary, requiring individual developers meeting specified criteria, to apply for, receive and comply with a permit for the lifetime of the development. ■

gely on submissions of digital River Basin Districts (RBDs) from EU Member States and Norway.
ternational RBDs shown on this map were not identified as being international by the Member
Adour-Garonne, Rhone and Seine in France; the Vistula in Poland; the Kemijoki and Vuoksi in
n Eider and Schlei/Trave RBDs are shared with the Danish International RBD.
n Eastern Alps RBD is shared with the Slovenian Adriatic RBD.
hat the Tornionjoki international RBD in Finland is shared with Sweden, most likely with part
ay international RBD. As the Bothnian Bay covers several river catchments, the Tornionjoki
have been kept separate in this map.
the Finnmark RBD between Norway and Finland is currently under review.

3) These are the boundaries of the river catchments extending beyond the EU27 border. They have been derived from the Catchment Characterisation and Modelling (CCM) database, developed by the Joint Research Centre (JRC), except the boundaries for the Danube international RBD which were supplied by the International Commission for the Protection of the Danube River (ICPDR).

4) Coastal waters are defined in the Water Framework Directive (WFD) as extending 1 nautical mile from the coastline. However, some Member States have included a larger part of coastal waters within the RBD boundaries.



13 OVERVIEW OF ENVIRONMENTAL DIRECTIVE TRANSPOSITION AND IMPLEMENTATION IN EUROPE AND THE UK

EU national governments are always accountable to the European Commission for transposition and implementation of Directive requirements, and resulting national policy.

Executive and regulatory decisions as the 'competent authority' within a national government policy framework may be devolved from central government to regional or local government, or to government agencies. Operational delivery of the regulatory requirements may also be delivered by government or government owned utility businesses (typically water supply and urban wastewater treatment), or by private business.

Somewhat surprisingly neither the European Commission, IMPEL or the European Network of Heads of Environmental Protection Agencies (NEPA) have produced a collation at EU level of the institutional and administrative arrangements for implementation in each Member State. A limited suite of national descriptions, focused on regulatory inspection and enforcement, is provided in the IMPEL Environmental Inspectors Reference Book 1999, but it can hardly be described as up-to-date or representative of the expanded EU.

13.1 UNITED KINGDOM - ENVIRONMENTAL REGULATORY FRAMEWORK

The UK government is responsible for policy and strategic direction for transposition and implementation of all Directives, working closely with devolved administrations in Scotland, Wales and Northern Ireland. In England the Department for Environment Food and Rural Affairs (Defra) is the lead Ministry. Defra also liaises with other UK government departments where interests overlap. Other EU states have similar types of arrangements.

In the UK national government policy is formulated into primary legislation – Acts of Parliament that are subject to public consultation and detailed scrutiny, and amendment by Parliament as they pass from draft proposals into law. For the most part, primary UK legislation is high level, identifying accountabilities for delivery, structure, duties and powers of delivery bodies, and specification of offences and sanctions. Acts of Parliament give ministers powers, subject to Parliamentary scrutiny, and public consultation, to make regulations which specify detailed requirements for implementation of the primary law.

Thus the Environment Act 1995 established the Environment Agency as a Non-Departmental Public Body (NDPB), independent of direct ministerial control, and specified the extent of its duties and powers as environmental regulator for England and Wales, and rights of appeal against its decisions. Regulations from the Minister for the Environment, Food and Rural Affairs, who is responsible for the Environment Agency, then specified detailed requirements. For example, these regulations included EU Directive specified statutory quality objectives, and national administratively consistent permit application and appeals procedures. The Environment Agency implements these procedures while affected parties must comply or risk sanction.

13.2 UNITED KINGDOM WATER REGULATORY SYSTEM

In England Defra provides high level guidance to the regulated water businesses and regulators in a Statement of Obligations. The chief regulator for the water environment is the Environment Agency, dealing with all water environmental issues, while Ofwat (Office of Water Services), the Water Industry Regulator, deals with control of the privatised monopoly businesses – the Water Service Utilities (WSUs), that provide public potable water supply, and conveyance and treatment of sewage.

The devolved governments of Scotland, Wales and Northern Ireland have similar arrangements, each with a separate environmental protection agency, and financial regulator of the Water Service Utility.

The UK regulatory environment has a significant impact on the behaviour and development of the privatised water industry that provides potable water, and sewerage and sewage treatment systems for UK citizens. The regulatory approach aims to do this through enabling dialogue, partnership, joint development and consultation. However, regulatory instruments are available should the need arise. The ability to use regulatory sanctions is important and is recognised by the water industry, bill payers and the general public as a necessary safety net.

The government and regulators have developed clear and complementary roles to provide a framework within which the water industry operates. The government is obliged to make arrangements to ensure compliance with European Directives. Box 13.1 shows the key components of the system:

BOX 13.1 UK WATER INDUSTRY REGULATORY FRAMEWORK

- **The government, through Defra, sets the strategic direction and determines appeals. Defra provides high level guidance to regulated businesses and regulators in a Statement of Obligations. The water industry economic regulator, Ofwat, sets water prices in accordance with the government's Social and Environmental Guidance to ensure that companies have sufficient resources to undertake their duties and customers are protected from excessive price rises.**
- **The Environment Agency, as the environmental regulator, determines the environmental standards, sets permits for abstraction and discharge, and assesses compliance.**
- **The Drinking Water Inspectorate sets and monitors the quality of water provided at customers' taps.**
- **The Consumer Council for Water represents the views of customers.**
- **The Water Service Utilities provide drinking water and treat sewage, maintain and develop infrastructure, and operate their businesses within the terms of their operating licence. They must also deliver financial returns to shareholders and meet debt obligations to banks, who take a keen interest in their asset values, revenues, and management performance.**

The economic regulator, Ofwat, is assisted in gaining accurate information about water company activities by independent reporters appointed to each company. These relationships are illustrated in Figure 13.1.

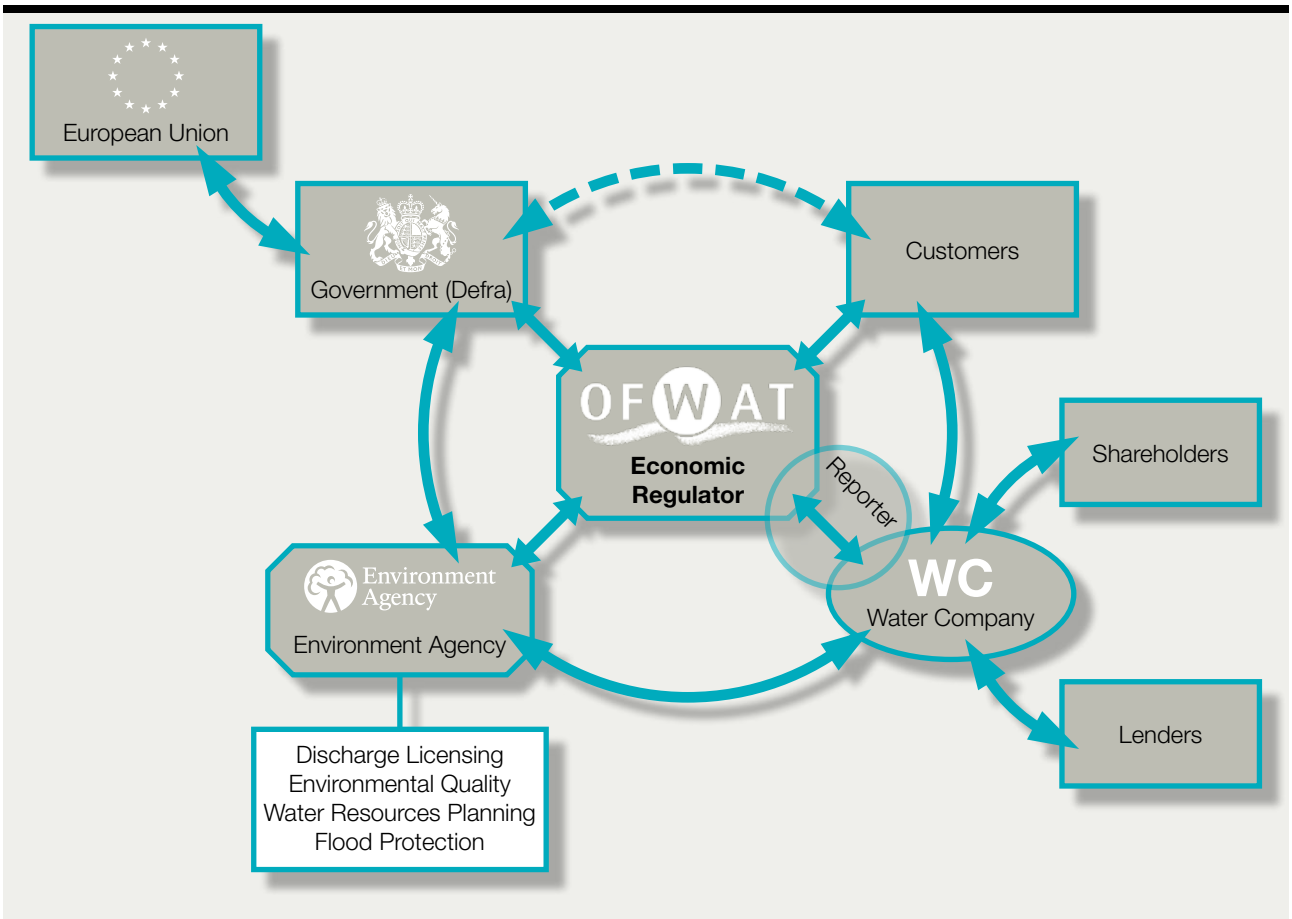


Figure 13.1 UK Water and Environment regulatory model

The roles of the regulators and the water industry have been determined by primary legislation, including the Water Industry Act, the Water Resources Act and the Environment Acts. These provide the statutory framework which is supplemented by regulations and guidance from Defra. In addition, each regulatory organisation has developed strategies and guidance, setting aims and objectives and providing clarity on specific technical issues. These guidance documents form the basis of the day-to-day relationships between the organisations, and in many respects drive the behaviour of the water industry in meeting regulatory requirements.

The strategy documents of each regulatory organisation chart the key outcomes, activities and costs over a five to twenty-five year period. Each will be subject to public consultation and discussion with other key organisations, including government departments. This is especially important, as each requires co-ordination with the other regulators and the water industry. At a strategic level these policy statements influence the costs and actions of the water companies and ultimately the cost to customers.

The technical guidance produced by each regulator provides the detailed framework under which the water industry operates. This guidance is developed in order to introduce new requirements or changes to operational practice or reporting. This will cover climate change, the supply-demand balance, drinking water quality, the water environment and other miscellaneous provisions. Whenever possible, guidance is drafted in close association with the water industry to ensure that it is workable and that it will result in the correct outcome. Policy and technical staff from each organisation work together within an agreed framework to draft and test this guidance. It is essential that good working relationships are maintained and that individuals have a good understanding of each other's needs and technical capability.

Agreement on guidance will be sought whenever possible before it is ratified by the sponsoring regulator. However, on some ▶

occasions the responsible regulator will need to determine the guidance unilaterally. Significant guidance documents may be subject to public consultation, especially if there are cost implications or impacts on the public. Once ratified, all guidance is in the public domain and is made available on request and much is freely accessible via web sites.

The UK regulators each have slightly different ways of determining national guidance and informing the water companies and the public about this. Ofwat produces a sequence of numbered Managing Director (MD) or Regulatory Director (RD) formal letters. In this way new requirements or guidance is sent directly via prearranged communication routes into each water company and other regulators and interested parties. These letters aggregate into a comprehensive suite of guidance upon which the water companies interact with Ofwat.

The Environment Agency produces an equivalent quality-controlled sequence of guidance notes covering its area of responsibility. These are assembled into environmental permitting (including discharges) guidance and abstraction licence guidance. The guidance is publicly available via the Agency's web site. Any changes to the manuals are sent to the water companies and to operational officers within the Environment Agency. Ultimately this guidance is imposed through changes to permit conditions, and enforced by monitoring and compliance assessments undertaken by the Environment Agency. Prosecutions are taken when necessary in the courts. The Drinking Water Inspectorate issues similar Information Letters which are available on their web site. Compliance with this guidance is assessed by a self-monitoring and reporting regime, with Drinking Water Inspectors taking regulatory action if required.

Each water company needs to take this guidance into account in the way that it operates. Companies have some latitude in the way that they comply with guidance and achieve permit conditions. However, they must meet the outcomes and satisfy the legal requirements of their permits.

With this regulatory framework occasions arise when there are conflicting requirements or where the water industry believes that the guidance is being disproportionately or unfairly applied in determining environmental permits. On these occasions the industry or individual companies can appeal, informally or formally. These appeals are determined by an independent inspectorate acting for the Secretary of State, the Planning Inspectorate. In important cases the Secretary of State has the right to 'call in' an issue and determine it directly, or to require a public inquiry prior to determination.

A feature of the UK water industry – and water industries in most other European countries – is the involvement of consultants at every level of the system, from regulatory planning to programme delivery (though they are not normally directly involved in the operational side of the business). These experts and specialists, working mostly for independent private companies, provide a pool of expertise that is constantly moving between the different organisations involved and greatly increasing the capacity of the industry to perform effectively. Individual consultants will move seamlessly among projects for different water companies and may work for Ofwat, the Environment Agency, and other organisations, including academic institutions, within the space of months and so there is a transfer of knowledge and expertise, whilst maintaining commercial and regulatory confidentiality.

BOX 13.2 HOW PRICES ARE DETERMINED IN THE UK REGULATORY MODEL

Economic regulation is achieved by controlling the prices each company is allowed to charge customers, rather than by control of rate of return on investment as is the case in some other countries.

Ofwat uses company comparisons as a surrogate to mimic market competition. The objective is delivery of service, not infrastructure.

Some key terms:

RCV – Regulatory Capital Value. This is the main reference for the market value of the company and its assets under the scrutiny of Ofwat. It works out at about 10% of the replacement cost of the assets. The company is seeking to generate a return on this value.

K – How much a company may raise or must cut its price each year.

This is controlled by the price limit formula

$$RPI \pm K + U$$

K is a number determined by Ofwat at a price review every five years for each company, for each year, to reflect what it needs above inflation in order to finance the provision of services to consumers. It may be changed at an interim adjustment between price reviews. RPI is expressed as the percentage increase in the Retail Price Index in the year and U is the amount of unused K not taken up in previous years.

Many factors are taken into account in the calculation of K, including the past performance of the company as reported to Ofwat, the cost of capital, the investment obligations placed on the company by regulators, efficiency improvements of the company, and the prevailing cost of infrastructure construction. The determination of K is negotiated through the Periodic Review Process by submission and review of detailed company business plans.

There is a need to balance and take an overview of the current and future requirements for the water industry, and this is undertaken on an ongoing basis by the regulators in a series of formal and informal quarterly meetings. Ongoing and frequent dialogue is important for all parties.

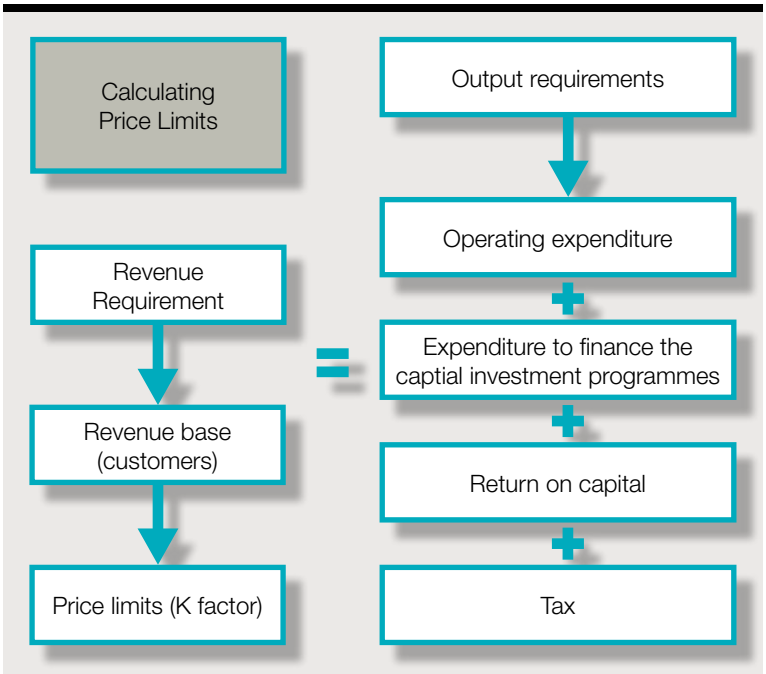


Figure 13.2 Calculating Price Limits

13.2.1 WATER PRICING

The objective of the economic regulatory process is to ensure financeability: the ability of appointed water companies to finance their functions through debt, equity or retained earnings. Companies being able to finance the proper performance of their functions is interpreted to mean two things. First, the companies should receive a return on investment at least equal to the cost of capital. Second, companies' revenues, profits and cash flows should be such that they can borrow as necessary in the debt markets and provide shareholders with sufficient incentives to produce additional funds through equity injections or retained earnings.

The Periodic Review Process (PR) is a five-yearly review of all the obligations and requirements of the water industry; it provides a formal and structured opportunity for dialogue and consultation. Following this, water prices are set for the next five-year period. These prices seek to balance the financeability of the companies with the need for maintained or improved service to customers and the environment, and affordability to customers. Box 13.2 describes the price setting mechanism.

13.3 PERMITTING SUMMARY & PRINCIPLES

Each abstraction above a minimum threshold from surface or groundwater will have an individual licence with conditions. In addition, discharge permits are set for all discharges to surface and groundwaters from industrial and urban wastewater treatment works, intermittent discharges from sewers and contaminated surface waters. Trade effluent permits are set for discharges of trade effluent to sewers. The permits reflect local conditions and environmental need, and will greatly influence the level of treatment, maintenance and operational costs. These are set and maintained at a local level.

The fine detail of the permitting calculation, and the mechanism for determination of permit conditions, is left to the competency of the environmental regulator, subject to appeal by aggrieved applicants. The environmental regulator publishes Guidance to Applicants for Permits, and provides a limited amount of free advice, charging thereafter according to the complexity of the proposed discharge. Applicants submit an application, which the environmental regulator checks to see if 'duly made' i.e. whether there is sufficient information to proceed with determination. (If insufficient information is received, consideration stops until the necessary information is provided).

The environmental regulator then determines the application, normally issuing a permit that specifies conditions that must be met for the discharge to be

legal (covered in more detail in Chapter 15 and 16). Typically the permit will limit the nature and location of the discharge and will include volumetric and concentration limits for effluent constituents, and may include operator monitoring and reporting requirements.

The applicant can challenge the regulator's decision via an appeal mechanism to an independent inspector appointed by the lead government department, or accept the regulator's conditions. If the conditions are accepted the permit holder may then commence the discharge in accordance with the permit, and provides such discharge monitoring and compliance information as the regulator has specified.

The environmental regulator may then monitor the receiving water to confirm that design assumptions regarding the permit calculations for the discharge are correct, and to determine whether the intended receiving water quality has been delivered at the controlled point of discharge. This is usually at, or equivalent to, the boundary of the permit holder's property, or at the boundary of the mixing zone if one has been determined for the discharge. Mixing zones are discussed in more detail in Chapter 21.

The environmental regulator monitors the quality in the receiving waters against the specific targets for that water body. The regulator may, from time to time, review the permit, making permit conditions more stringent if the discharge is having an unacceptable impact, or relaxing them if design assumptions prove to be over-precautionary. The regulator may also contribute to government or EU reviews of water quality standards.

All this process is in the public domain, with key documents and information placed on the Public Register held by the regulator, e.g. applications, advertisements, consultation responses, permits, monitoring results, and information about appeals and enforcement activity. The Register is open for access by the public at the regulator's offices, and is increasingly becoming web based to widen its availability.

The environmental regulators collate the water quality compliance information, in accordance with Directive requirements and report to their lead departments and thence to Defra where UK-wide information is collated. Defra then submits the collated UK information to the European Environment Agency, who in turn collate the Member State information and report to the Commission. The Commission then reports to European Parliament and Council, and publishes a report on Directive compliance within the European Community.

The whole regulatory process is rather like the layers of an onion, each of which represents an 'Issue Management' or 'plan, do, check, review,' cycle for each of the players, from European Parliament and Council, down to operator, and back again. (See Chapter 2, Fig. 2.3)

At the national level the regulatory cycle focuses on defining the obligations and ensuring there is a system in place to deliver them as effectively and efficiently as possible, and to demonstrate that this is being done. At regulator level the focus is on defining the scale of the regulatory effort and resources required, ensuring that the obligations are publicised to target audiences, issuing and monitoring permits as needed, and reporting progress to government and stakeholders. From an operator perspective the focus is on understanding what the regulatory obligations are and how to fit them into business practice at least cost and maximum benefit. This is considered in more detail in Chapter 15 and 16.

14 ACHIEVING WATER FRAMEWORK DIRECTIVE AND IPPC DIRECTIVE COMPLIANCE

The Water Framework Directive (WFD) is an umbrella under which the historic and single issue Directives can be optimised in a co-ordinated manner, focusing on water resource outcomes.

When the WFD is fully implemented a number of the existing Directives will be unnecessary and can be repealed, simplifying the regulatory environment. This 'Framework Directive' approach is being used for a number of similar environmental challenges including waste management.

Achieving and maintaining compliance with WFD objectives can be via a number of mechanisms, of which discharge regulation and permitting is just one. Many activities are not amenable to a specific discharge control regime or permits, and 'softer' more business-focused measures are needed to ensure that the activity does not result in deterioration of status, e.g. rules for new developments requiring sustainable drainage systems (SuDS) for surface water runoff management; sediment management requirements for activities in water bodies such as construction; specified good agricultural practice upon which subsidy payment depends.

In England the government is promoting a 'Catchment–Based Approach' to achieving reductions in diffuse pollution, encouraging local stakeholders and interest groups to work with regulators and local government. More details are given in Chapter 22.

14.1 COMBINED APPROACH

The Water Framework Directive adopts the 'combined approach' to securing compliance with Directive objectives.

The combined approach seeks to optimise the use of the following mechanisms:

- Environmental Quality Objectives (EQS)
- Emission Control, usually based on IPPC and centred on Best Available Technology (BAT)
- No Deterioration

The Directive and its daughter Directives establish water quality standards for surface and groundwater which must be met within a timescale. The EQS approach is usually used to determine the optimum permit limits necessary to ensure that the standards in the receiving environment are met. Modelling methods are used to calculate permit limits and to optimise between sources of pollution that may cause failure (see Chapter 20).

Emission Control mechanisms can also be used to meet or exceed these environmental standards. These are set by the application of production process based BAT standards to the emissions. If these controls alone will not achieve compliance with environmental standards then EQS mechanisms are used to further tighten controls to ensure compliance in the receiving waters.

The No Deterioration element adds a further safety mechanism to ensure that current water quality is not allowed to get worse, or that regulatory actions do not have negative consequences on water quality.

In this way the regulatory mechanisms can be used in combination to ▶

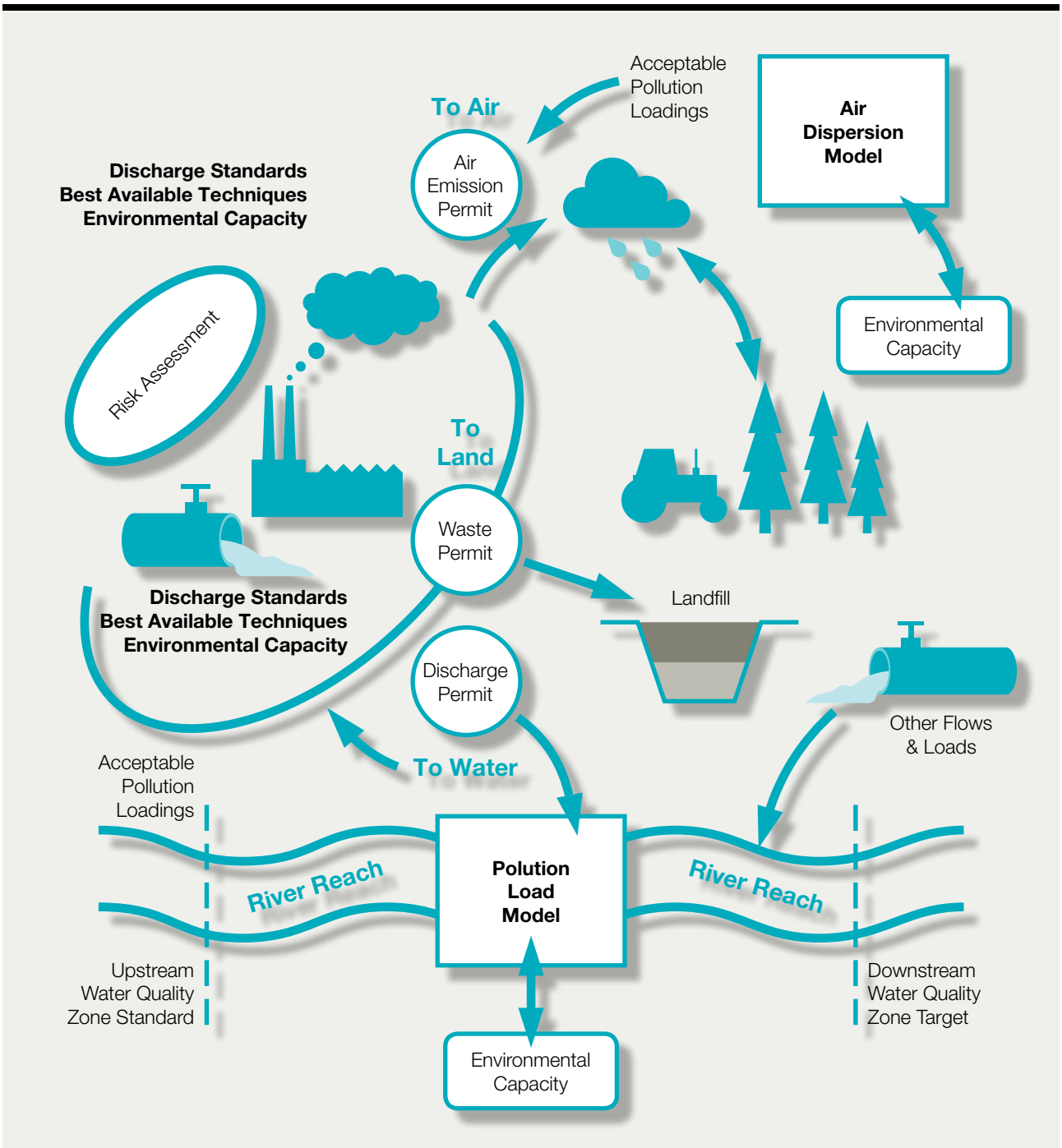
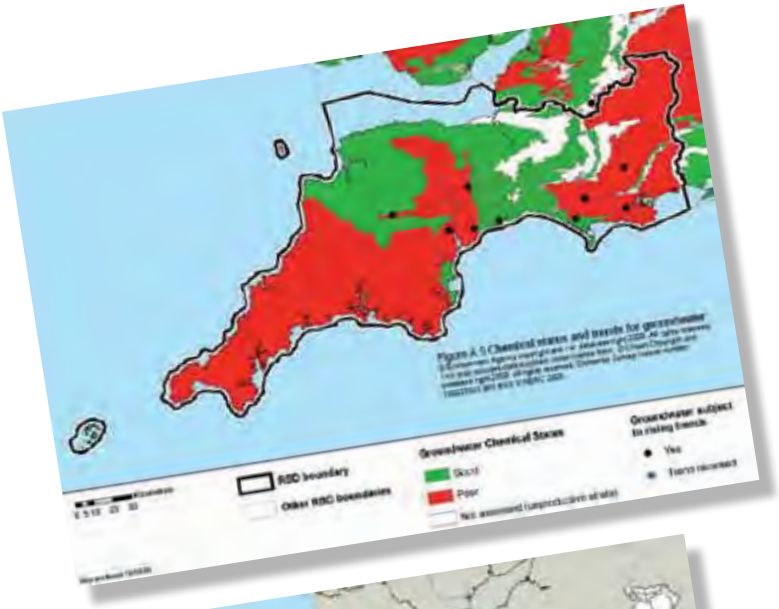


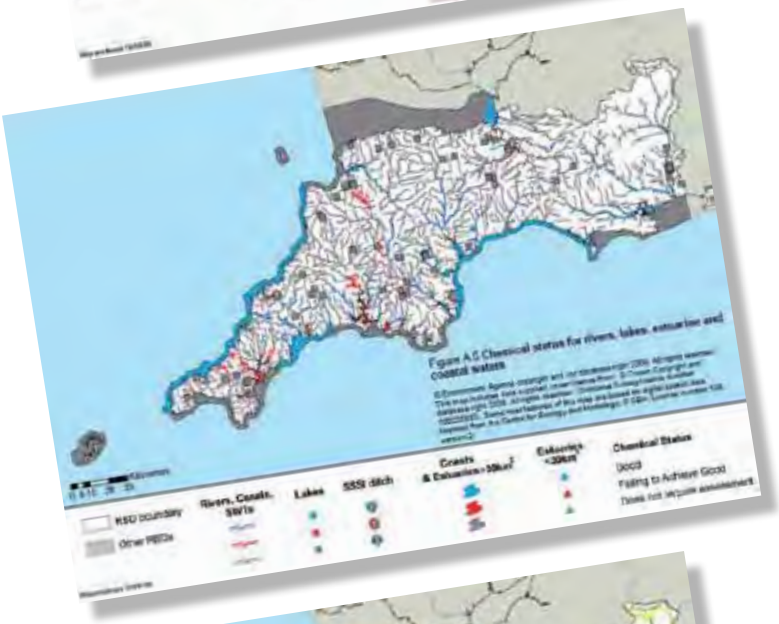
Figure 14.1 Overview - Combined approaches to environmental protection

ensure achievement of standards in the receiving waters.

There are provisions under the Integrated Pollution Prevention and Control (IPPC) Directive for emission control mechanisms based on Best Available Techniques (BAT) to be used in specified industrial sectors. (This is currently being subsumed into the Industrial Emissions Directive 2011 which is in the process of transposition (by 2013) by Member States.) Indicative BAT is defined for each relevant industrial sector in European Commission approved BAT Reference Notes, - BREF Notes and draft guidance.

Normally use of BAT will result in effluent and surface water discharges to receiving waters that do not threaten compliance with water quality standards. In situations where use of BAT alone will not deliver





achievement of the water quality standard, (e.g. low dilution available), treatment to a standard better than BAT is required, so that the relevant receiving water can comply with the water quality standards. In this case the environmental capacity needs to be calculated, usually by the application of modelling techniques, and the acceptable pollution loadings calculated to be incorporated to the discharge permits. This can, of course be a material consideration for companies in deciding where to locate new plant or to improve existing plant.

A diagrammatic overview of the combined approach, including IPPC for air, land and water emissions is given in Figure 14.1.

14.2 BEST AVAILABLE TECHNIQUES (BAT)

The simple operational definition can be best described as:

'**Best**' – the most effective techniques for achieving a high level of protection of the environment as a whole.

'**Available**' – techniques developed on a scale which allows them to be used in the relevant industrial sector, under economically and technically viable conditions, taking into account the costs and advantages.

'**Techniques**' – includes both the technology and the way the installation is designed, built, maintained, operated and decommissioned.

Technically, BAT is defined in Article 2.11 of the IPPC Directive as 'the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing, in principle, the basis for emission limit values designed to prevent, and where that is not practicable, generally to reduce emissions and the impact on the environment as a whole'.

14.3 BAT IMPLEMENTATION UNDER IPPC

Edited extract from Defra IPPC Guidance:

The system of Integrated Pollution Prevention and Control (IPPC) set out in the IPPC Directive applies an integrated environmental approach to the regulation of certain industrial activities. This means ▶

that emissions to air, water (including discharges to sewer) and land, plus a range of other environmental effects, must be considered together. It also means that regulators must set permit conditions so as to achieve a high level of protection for the environment as a whole.

These conditions are based on the use of the 'Best Available Techniques' (BAT), which balances the costs to the operator against the benefits to the environment. IPPC aims to prevent emissions and waste production and where that is not practicable, reduce them to acceptable levels. IPPC also takes the integrated approach beyond the initial task of permitting through to the restoration of sites when industrial activities cease.

The web site of the European Commission contains general background information on the IPPC Directive and its successor, the Industrial Emissions Directive (Directive 2010/75/EU).

Guidance on the interpretation and implementation of the IPPC Directive can also be found on the Commission's web site. The Commission's IPPC Bureau web site contains links to IPPC conference proceedings as well as to the European guidance documents on best available techniques.

More details on the IPPC permitting process and examples of permits are given in Chapter 18.