

# Understanding the Costs of Environmental Regulation in Europe

Edited by  
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# Understanding the Costs of Environmental Regulation in Europe

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# Preface and acknowledgements

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Environmental regulation is an area of considerable debate. Protests are frequently made that ‘red tape’ (a pejorative term derived from the tape used to hold together English legal documents) is placing an undue burden on business. These are countered with claims that regulation, far from being a drag on the economy, can stimulate innovation and help the market function more efficiently.

One of the areas of contention is the accuracy of regulatory cost estimates: do the predicted costs used to develop and implement policy turn out to be correct? A range of theories have been proposed to explain why costs will tend to be overestimated or underestimated. While the arguments concerning regulatory costs are interesting from a theoretical perspective, they are also central to the practical process of implementing regulation. Identifying the optimum level of regulatory intervention requires an understanding of the costs and benefits. Inaccurate assessment of the costs (or benefits) can lead to too much or too little regulation, which in turn can hinder economic growth, deplete the natural resource base and impact on human health.

In recognition of the importance of cost estimation, several studies have recently been commissioned by the UK Department for Environment, Food and Rural Affairs (Defra) and the European Commission’s Environment Directorate. This book draws together the findings of these studies with the wider evidence. It should be of interest to several groups. Firstly, for those with an academic interest in the economics of environmental regulation, there is a comprehensive review of the literature, detailed analyses of specific sectors and a discussion of the role of innovation. Secondly, it is hoped that the practical suggestions for improving the accuracy of regulatory cost estimates will be of interest to economists grappling with regulatory and other impact assessments. Finally, the rationale for regulation is outlined in the belief that a knowledge of the ideas that underpin regulation will help non-economists (for example from regulated industries and non-governmental organisations) to engage in the wider debate about environmental regulation.

The authors would like to acknowledge the support of the UK Department for Environment, Food and Rural Affairs, which funded one of the research projects on which this book is based (*Comparing the ex ante*

and *ex post* costs of complying with regulatory changes (EPES 0405–19)). Original text © Defra, 2006.

The authors would also like to acknowledge DG Environment, the Environment Directorate-General of the European Commission, for permission to draw on the results of the project *Ex post estimates of costs to business of EU environmental policies*. Some of the content of this book is based on and adapted from the following reports and case studies from this project, which are published on the European Communities' Europa website.

1. *Ex post* estimates of costs to business of EU environmental policies: report of workshop at the European Commission, 10 October 2005.
2. *Ex post* estimates of costs to business of EU environmental policies: a case study looking at ozone depleting substances, final draft: 28 November 2005.
3. Costs of compliance case study: Packaging & Packaging Waste Directive 94/62/EC. Final report submitted by GHK, June 2006.
4. Literature review on *ex post* assessment of costs to business of environmental policies and legislation, final version, September 2005.
5. *Ex post* estimates of costs to business of EU environmental legislation. Final report, 2006.

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The Carbon Trust (Figure 15.1)

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## PART I

### Rationale and overview



# 1. Introduction

**Paul Ekins, Michael MacLeod and Dominic Moran**

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Government regulation is an important fact of economic life in all developed economies. It has become more pervasive as economies have become more complex, as technologies have become more powerful and potentially hazardous, and as consumer expectations of product and environmental safety and quality have increased.

Regulations are, of course, supposed to deliver benefits to society at large. They also usually impose costs on those who are regulated and their administration results in further social costs. If the regulations are justified, then their social benefits will exceed their costs, but even where this is the case it will always be desirable to keep regulatory costs as low as possible, consistent with the desired social benefits being achieved.

Given that many environmental effects are not taken account of by markets, the task of government is to achieve socially desirable levels of environmental quality and to moderate harmful development patterns with appropriate interventions, including regulations that set standards and compliance rules. There is a range of regulatory levers that the government can use to deliver sustainable growth. Environmental policy is an evolving area of policy with a tendency to look for market-based solutions rather than traditional standard-setting regulations, which can be less flexible and more costly.<sup>1</sup> The challenge is to identify the right amount of regulatory intervention. Too much, and growth and innovation can be hindered. Too little, and growth can be bought at the expense of the natural resource base including human health and well being.

In theory the right amount of regulation balances the marginal costs and benefits to determine an optimal level of intervention. The practice of calculating costs and benefits to identify this optimal level is more challenging. Government can at best make a reasonable approximation of this theoretical optimum. But in the strictest sense there is always likely to be too much or too little regulation. This fact, and the fact that any social optimum is essentially unobservable, leads to claims of disproportionate cost being borne by the various affected parties. For example, the study of regulation in the US, EU,

Australia and New Zealand by Chittenden *et al.* (2002) suggests that small businesses bear a disproportionate share of the costs of regulation.

The importance of identifying the optimal level of intervention, and hence of predicting costs accurately, is heightened by the present scale of regulation and the rate at which it has increased since the 1960s. Dudley and Warren (2004, p 1) used 'the expenditures of federal regulatory agencies . . . as a barometer of regulatory activity'. Their figures indicate that federal regulatory spending in the US (measured in year 2000 Dollars) increased from \$2.5bn per annum in 1960 to \$37bn per annum in 2003. Note that this more than ten-fold increase is in inflation-adjusted terms. Spending by the environmental agencies was (in 2003) the second largest component of this (after Homeland Security) at \$5.8bn. The cost of environmental protection to the US overall has been estimated to be in excess of \$150bn per annum, representing about 2 per cent of GDP (Morgenstern *et al.* 1998). The total cost of all regulation (not just environmental regulation) has been estimated to be 10–12 per cent of GDP in the USA and the Netherlands, and is thought to be about the same in the UK (Better Regulation Task Force 2005). However, regulatory costs are difficult to determine accurately; as the OECD noted (1997: quoted in Better Regulation Task Force 2005, p 12), 'many governments have no idea how much of their national wealth they are spending through regulation'.

In response to concerns about regulatory burden (often characterised as 'red tape'), many countries now require some kind of impact assessment when new policies are being drawn up. A new system of Impact Assessment (IA) was introduced in the European Union (EU) in 2002 (EC 2002). In the UK, government departments are required to undertake an Impact Assessment (prior to 2007 these were called Regulatory Impact Assessments – RIAs) when introducing any policy change that places a burden on businesses, charities, the voluntary sector or individuals.<sup>2</sup> Part of this assessment involves the appraisal of the costs (and benefits) associated with complying with all the available options as well as the wider economic costs.

The calculation and scale of regulatory costs comprise the subject matter of this book, and in particular the comparison of calculations of regulatory costs before the regulations have been introduced (called *ex ante* calculations) with those after their introduction and implementation (called *ex post* calculations). The chapters in this book explore in detail how these costs are calculated, how *ex post* and *ex ante* calculations seem to be related, and why this might be.

Evidence from a recent policy evaluation commissioned by the UK Department for the Environment, Food and Rural Affairs (Defra) (Watkiss *et al.* 2004) suggested that in one case, the compliance costs, when assessed *ex post*, were lower than the *ex ante* assessment made beforehand. It is

unclear whether this outcome is unusual or typical for regulatory changes introduced across Defra's policy areas. In order to shed more light on the validity of RIA cost estimates and identify ways of improving their accuracy, Defra decided to commission a study comparing the *ex ante* and *ex post* costs of complying with regulatory changes.

This book draws on the case studies undertaken during the Defra study – along with the accompanying analysis – and on the results of two other projects commissioned at the European level. The seven Defra case studies, five of which are summarised in the chapters that follow, concerned: the packaging regulations for hazardous substances; the UK Air Quality Strategy (Chapters 4 and 5); regulations to control major hazards (Chapter 8); groundwater regulations (Chapter 12); regulations on the welfare of farmed animals (Chapter 13); food safety regulations (Chapter 14); and meat handling regulations. The final report of the Defra project, the main conclusions of which are included in Chapters 3 and 16, is referenced here as MacLeod *et al.* (2006).

At about the same time as the Defra study, DG Environment of the European Commission commissioned a consortium of European institutes to investigate the same topic through a literature review and six case studies, five of which are summarised in the chapters which follow: regulation of car emissions from road transport in the Netherlands (Chapter 6); the Large Combustion Plants Directive (Chapter 7); the Integrated Pollution Prevention and Control Directive (Chapter 9); the Montreal Protocol and the EU regulations on ozone depleting substances (Chapter 10); the Nitrates Directive (Chapter 11); and the Directive on Packaging and Packaging Waste. The final report of this European project, the main conclusions of which are also included in Chapters 3 and 16, is referenced here as Oosterhuis (2006a).

Clearly the choice of case studies was an important element of the projects. For the Defra project, a long list of potential case studies was generated after undertaking a literature review and consulting with experts and policy makers. A range of selection criteria was then used to create a provisional short list of suitable case studies. The basic criteria were that: a) there was a robust RIA document containing detailed *ex ante* cost estimates; b) a sufficient amount of time had elapsed for the main body of each regulation to be implemented; and c) there was some form of *ex post* compliance costing, preferably estimated or compiled by an independent analyst. In fact, a lack of rigorous *ex post* evaluations meant that some *ex post* data had to be collected as part of the project. In the case of the project for DG Environment, the choice of case studies was made following discussions with experts in the European Commission, and focused on six important pieces of EU environmental legislation.

As will be seen, a consistent theme that emerges from the case studies is that a major cause of uncertainty in the *ex ante* estimation of regulatory costs is the role to be played by innovation in meeting new regulations. It is to be expected that the more innovation that the regulations bring about, the less the cost of meeting them will be, but this is very difficult to judge in advance for at least two reasons. First, innovation is inherently unpredictable, so that it is uncertain whether it will take place and what its economic implications will be. Second, it is not known with any assurance what kind of regulations (or other policy instruments) are most likely to stimulate an innovative response. A synthesis paper from the project formed the basis of a workshop at the European Commission in June 2006 (Ekins and Venn 2006), and also provides the basis for Chapter 15. The final report from the project (Oosterhuis 2006b) was published in November 2006.

This book therefore draws on a rich empirical base of varied case studies, with associated analysis which is both recent and not very well known. Together the projects underlying the book added significantly to the understanding of regulatory costs, why calculations of them differed before and after the event, and how they could be reduced. This book pulls together the insights from these projects into a single integrated narrative for the first time. The next chapter gives the theoretical basis and rationale for regulation. Chapter 3 draws together the insights and conclusions from the wider evidence base on regulatory costs. The case studies then follow. The extended Chapter 15 presents the results and case study summaries of the project on innovation dynamics, and Chapter 16 concludes. It is the editors' hope that this book will both strengthen the case for appropriate regulation and help policy makers, regulators and those who are regulated to understand how the costs of regulation may both be calculated before and after the event, and kept to a minimum.

## NOTES

1. Economically inefficient, which means that the overall costs are not minimised irrespective of who bears them.
2. See: [www.berr.gov.uk/employment/research-evaluation/ria/index.html](http://www.berr.gov.uk/employment/research-evaluation/ria/index.html), accessed 22 April 2008.

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