

ENVIRONMENTAL  
PROTECTION  
IN THE  
EUROPEAN  
UNION  
3

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Editors

# Standards and Thresholds for Impact Assessment



Springer

# **Environmental Protection in the European Union**

## Volume 3

*Editors*

Michael Schmidt and Lothar Knopp, Cottbus, Germany

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# Standards and Thresholds for Impact Assessment

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## Foreword

From the beginning of environmental regulation and environmental impact assessment, debates have raged about standards and thresholds. This book adds a great deal of light to such discussions. It will provide important guidance to those who must confront these issues.

The earliest pollution laws either banned activities outright (such as King Edward I's ban on the burning of sea coal in London in the fourteenth century) or provided only vague guidance to courts or administrators (such as opacity standards for smokestack pollution). The earliest environmental impact assessment law (the National Environmental Policy Act of the United States, 1969) simply applied to actions "significantly affecting the quality of the human environment," without more definition and used such terms as "the environmental impact of the proposed action," "long-term productivity," and "irreversible and irretrievable commitments of resources."

How far we have come! Now nearly every country has legislation providing specific standards for contamination or harm to the environment be used for environmental decisions. Most countries use numerical or similar thresholds for triggering an EIA and for evaluation of activities. Of course, the standards themselves may or may not be scientifically defensible or adequate to take into account the values of the society where they are used. The chapters in this book help to uncover the assumptions used in various contexts and offer a unique opportunity to view standards and thresholds in a comparative context. It is sure to become a standard reference work for environmental professionals of all kinds.

*John E. Bonine, Professor of Law in the LL.M. and J.D. Programs, University of Oregon; Founder, Environmental Law Alliance Worldwide  
Oregon, November 2007*

## Preface

Practitioners – responsible for decision-making in impact assessment in different sectors and at different planning levels – need on the one hand a lot of expertise, and on the other hand case studies as well as legal standards and scientific thresholds as benchmarks for decision-making. With new requirements for impact assessment and dynamically changing environmental conditions, there exists a sustained need for guidance to practitioners. Therefore the main motivation for editing this Handbook on standards and thresholds for impact assessment was to give guidance to practitioners for good practice on environmental impact studies (EISs), which are often very complex and comprehensive. The editors of this Handbook have attempted to partly fill the existing gap of scientific advice to practitioners in the field of assessment values and to meet the need for additional guidance. Standards and thresholds are applied in several stages of the environmental impact assessment (EIA) process – such as screening, scoping, impact prediction and assessment, as well as monitoring.

Many standards and thresholds are politically set to classify ranges of high risk or likely harm to human health and the environment. Assessment standards and thresholds are not defined in the EC EIA or SEA Directives, but national environmental policy, EIA Acts plus Spatial and Sectoral Planning Acts supply many such standards. However, legal obligations alone cannot guarantee high quality environmental assessments; expert knowledge and common efforts by all stakeholders involved in decision-making are needed. Non-binding assessment thresholds have to be derived from environmental objectives and operationalised as guidance values for the assessment of impacts affecting a specific area. Such case-by-case decisions at policy, plan, programme and project level require sophisticated knowledge on the significant effects of many development actions on the one hand and on a wide range of environmental media on the other hand. Practitioners need considerable expertise and high quality data to achieve an efficient and environmentally sound assessment process. Competent and licensing authorities additionally have to understand and approve quantitative and qualitative values, which are applied to and influence the results of assessments. They generally have to accept statistics from analyses and evaluations of environmental consultants or planners in charge of the environmental impact study (EIS). Delivered data, applied assessment methods and values are often not sufficiently transparent.

In EIS, estimates have to be made on the significance of impacts and the carrying capacity of the state of environment in the affected area. Prevention requires a long-term time schedule for future decades, which may not be achieved with the mitigation of the significance of impacts of one single project activity, but which requires an overall review of different types of environmental assessment in all sectors and at all planning levels – leading often to a cumulative and/or strategic approach. The book gives examples of the methodological derivation and practical application of environmentally relevant standards and thresholds in EIA. It seeks in particular to serve as guidance for competent authorities and licensing authorities to better: identify significant impacts in the scoping process, evaluate the qual-

ity of assessments of area-related environmental conflicts in the EIS, and to understand the effect quantitative and qualitative values have on final decisions.

The book is divided into five Parts, which present a wide variety of approaches from different technologies and sectors affecting different environmental media, future environmental issues and implementation processes. Part I introduces legal, procedural and political fundamentals, which deliver standards and threshold values of varying strengths and status. Part II discusses standard and threshold values for different types of projects, with examples for both site-specific and spatially dispersed projects. Part III evaluates thresholds and standards from the perspective of the environmental media and their carrying capacity. Part IV discusses emerging fields of application and Part V concludes with implementation steps. A variety of different case studies presented in the book link to possible practical application fields at different levels of planning and in different sectors. The book also includes some future oriented issues, where the implementation of new standard and threshold values will be necessary quite soon if good practice and high quality EIA is to be further promoted.

We wish to thank all authors from the various countries for their valuable articles, which made possible this comprehensive publication. We do also accept that despite this wide scope there are even more examples of project types and environmental media which might have been included. We also express our acknowledgment to the PhD students from the international network for Education and Research in Environmental and Resource Management (ERM) at BTU Cottbus, who were invited to contribute as future staff members in science and practice, and who will be soon in charge of promoting a sustainable use of our planet's resources. We also thank Mr. Dmytro Palekhov for his unwavering support in the final stages of formatting all manuscripts.

This Handbook is the result of cooperation between the Brandenburg University of Technology (BTU) Cottbus in Germany, the Oxford Brookes University in Oxford in the United Kingdom and the Blekinge Institute of Technology in Karlskrona in Sweden. We hope practitioners, researchers, academics, students and central and local government officials will find the content enlightening in both its practical application and its theoretical explanation of the function and importance of the use of standards and thresholds in impact assessment.

*Michael Schmidt, John Glasson, Lars Emmelin and Hendrike Helbron  
Cottbus, Oxford and Karlskrona, November 2007*



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