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**SUSTAINABLE, PROPORTIONATE AND COST-EFFECTIVE ACTION PLANS  
TO DELIVER AIR QUALITY OBJECTIVES WITHIN AIR QUALITY  
MANAGEMENT AREAS**

**ABSTRACT**

This thesis examines the process of Local Air Quality Management in English and Welsh local authorities that have air pollution problems arising from industrial emissions. The Environment Act 1995 imposes Local Air Quality Management (LAQM) duties on local authorities and this work examines the process of LAQM in LAs with exceedences of air quality objectives due, in part or in full, to industrial emissions. The research provides the opportunity to explore the relationship of the LAQM regime introduced by the Environment Act 1995, and the Integrated Pollution Prevention and Control regime regulated by the Pollution Prevention and Control Act 1999. The work examines the extent to which local authorities and the Environment Agency collaborate in the review, assessment and action planning stages of LAQM. Collaboration and communication is judged an essential precondition for policy integration and implementation in an action plan designed to improve air quality in areas designated as Air Quality Management Areas (AQMA)<sup>1</sup>. This study gives particular attention to the application of the principles of sustainability, proportionality and cost-effectiveness within the development of air quality action plans.

The research methodology consists of appraisal of local authority air quality review and assessment reports, questionnaire surveys and case studies in five local authorities. The two main regimes of air pollution control are being implemented in other EU countries (the Air Quality Framework Directive and the Integrated Pollution Prevention and Control Directive) and thus case studies in Spain and Sweden form an important research component. A theoretical air pollution modelling was carried out to explore some of issues associated with point source modelling for LAQM purposes.

This thesis provides local authorities with air pollution problems, at least in part, from industrial emissions with a framework for the preparation of sustainable, proportionate, and cost-effective air quality action plans. Drawing upon both quantitative and qualitative data, a theorised position is presented which argues that the balance between scientific assessment of air quality and social, economic, and political factors is critical in determining sustainable, proportionate and cost-effective of management solutions. Case study authorities implemented these principles according to the importance of each factor at the local level. The study shows that the Environment Agency and local authorities have been working in partnership in LAQM and the degree of collaboration corresponds to the significance of the impact of the Environment Agency regulated processes in the AQMA and personal interest of the Environment Agency officers. Advanced practice and policies found to be successful in Spain and Sweden offer potential options for transfer and policy development in England and Wales.

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<sup>1</sup> *An Air Quality Management Area must be designated if an Air Quality Objective is not likely to be achieved in areas with public exposure relevant to the Objective in question.*

Questionnaire surveys and case study method have revealed fugitive emission sources of particulate matter as major contributor to a breach of Air Quality Objectives, which consequently leads to AQMA declarations. This gives the Environment Agency a new area of investigation to concentrate on than the 'traditional' point source of sulphur dioxide. The project concludes with a suite of recommendations for the future practice of air quality management in relation to industrial pollution sources. This includes recommendations to improve co-ordination and collaboration between all stakeholders, and a closer link between the Integrated Pollution Prevention and Control, and Local Air Quality Management regimes.

**July 2005**

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