

**Institute of Environment & Resources**  
 Technical University of Denmark  
 Bygningstorvet, Building 115  
 2800 Kgs. Lyngby  
 Phone: (+45) 45 25 16 00  
 www.er.dtu.dk



# SOURCE CONTROL OPTIONS FOR REDUCING EMISSIONS OF PRIORITY POLLUTANTS (SCOREPP)

## Abstract


The ScorePP project aims to develop comprehensive source control strategies that authorities and industry can use to reduce emissions of priority pollutants (PPs) from urban areas into receiving waters, focusing on the priority substances including the priority hazardous substances identified in the Water Framework Directive.

ScorePP first identifies PP sources and quantify releases in urban areas and identifies and assesses strategies to limit PP release from urban sources. GIS-based decision support tools to identify emission control measures and integrated urban source-and-flux models will also be developed. Furthermore, cost-effectiveness and societal implications of source control strategies will be assessed. These will create appropriate PP emission reducing strategies, and a multi-criteria approach will evaluate these in relation to economic, societal and environmental impacts. Input from key stakeholders is also included, adapting project outcomes and communicating results to a wide audience.

## Keywords

Priority pollutants, urban water environment, source control, Water Frame Directive (WFD)


## Participants

 P.S. Mikkelsen\*, A. Ledin, B.K. Rasmussen, K.D. Grieger, H.C. Holten Lützhøft and E. Eriksson, Institute of Environment & Resources, Technical University of Denmark


 F. Verdonck and L. Benedetti, Department of Applied Mathematics, Biometrics and Process Control, University Gent, Belgium

 M. Revitt and L. Scholes, School of Health and Social Sciences, Middlesex University, United Kingdom

 A. Lecloux, Envicat Consulting, Belgium

 E. Trouve and L. Castillo, Municipal Sewage Management Department, VEOLIA Anjou Recherche, France

B. Kompore and P. Banovec, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Slovenia

 L. Sörme and A. Jonsson, City of Stockholm, Environment and Health Administration, Sweden

C. Bessat and J. Trouve, Desenvolupament I Societat ESTUDIS SA, Spain

 P. Vanrolleghem, ModelEAU, Département Génie Civil, Université Laval, Canada

Project coordinator \*, psm@er.dtu.dk

[www.scorepp.eu](http://www.scorepp.eu)

## Overall Project Objective:

To develop source control strategies that authorities, cities, water utilities and chemical industry can use to reduce emissions of priority pollutants (PPs) from urban areas into the receiving water environment.

**WP1: User requirement analysis and dissemination to end-users.**

**Objective:** Involve key urban stakeholders.

**WP2: Analysis of European case studies.**

**Objective:** Evaluate the usefulness of developed measures for European case cities together with local authorities, water utilities and industry, and improve monitoring programmes.

**WP3: Source characteristics of priority pollutants.**

**Objective:** Identify sources of PPs in urban areas, and quantify PP loads.

**WP4: Limiting release of priority pollutants.**

**Objective:** Identify strategies to limit the release of PPs from urban sources, and assess their efficiency and feasibility.

**WP6: GIS-based identification of emission control.**

**Objective:** Characterise sources of PPs in urban catchments, using relational databases and GIS systems, visualising pollution sources, paths and loads.

**WP5: Treatment options.**

**Objective:** Identify emission control technologies for PPs in urban water systems, and assess their efficiency and feasibility.

**WP9: Integration and comparisons of emission control scenarios.**

**Objective:** Formulate case city archetypes representing PP emission states in different geographic and socio-economic contexts throughout Europe.

**WP7: Models and monitoring strategies.**

**Objective:** Develop source-and-flux models to quantify release of PPs from urban sources, PP fates within different treatment systems, substance flows and behaviour in urban systems and emissions to aquatic environment.

**WP8: Socio-economic evaluation of source control options.**

**Objective:** Assess costs and cost-effectiveness of identified measures to limit or eliminate PP release, benchmark different emission control strategies and determine socio-economic impacts.

**WP10: Project management and coordination.**

**Objective:** Provide scientific and overall project management, and provide an internal and external information structure. Initiate and coordinate external information flow, and manage political, ethical and gender issues.

