Pollutants In the Urban Environment (PUrE)

The mission of the PUrE project is 'to enable valid and transparent assessments of sustainable development scenarios by providing an improved scientific understanding of the behaviour and impacts of pollutants in the urban environment'.

This mission has been set in motion through the PUrE Scoping Study (2003 to 2004) conducted to develop an initial conceptual basis and define a decision-support framework capable of integrating the three critical steps defined by the consortium partners (see figure):

1. mapping the sources and flows of pollutants associated with human activities in the urban environment;
2. modelling the fate and transport of pollutants in the environment; and
3. understanding (identifying and quantifying) the impacts of pollutants on human and ecological health in the urban environment.

This vision will extend into the Main Study, proposed for 2005 to 2009.

Stage 1 - Stakeholder Consultation
The Research End-users workshop in October 2003 identified numerous research actions (26 in total), which are prioritised as follows:

- Develop integrated models of urban pollution, health, environmental quality, and ecological health;
- Improve knowledge of chemical (pollutant) interactions;
- Utilise Life Cycle Assessment (LCA) and whole life costing;
- Define end-users as part of a gap analysis;
- Review integrated and holistic approaches taken by stakeholder organisations; plus many others... (see SNIFER 2004).

Several of the research actions have been explored in four (six-month) mapping study research projects, carried out by the academic partners (see list of reports). These actions and additional needs identified by the PUrE researchers will be addressed in the Main Study (see below).

The Signpost Document presents the findings of the survey of available models and tools for urban pollution. Examples of tools for inclusion in the PUrE framework include LCA, substance flow analysis (SFA), air and water pollution dispersion, health impacts models, whole life costing and sustainability indicators.

Stage 2 - Framework Development
The main aim is to develop an integrated decision-support framework comprising a suite of appropriate models and tools that can be selected by different stakeholders or end-users (policy-makers/developers, local authorities, industry, researchers, NGOs) to conduct simple screening studies and/or detailed modelling assessments of options for a more sustainable management of urban pollution.

The conceptual framework consists of several stages (see flowchart): problem structuring where the end-users identify their main drivers and key questions; problem analysis using either a problem- or decision-oriented approach (and corresponding tools); and, problem resolution (assessing the sustainability of urban scenarios/options).

The scoping research has explored different parts of the overall framework. More detailed research and demonstration of applications is planned for the Main Study (see below).

Stage 3 – Work Programme for the PUrE Main Study
The main deliverables for the PUrE Main Study will be a decision-support methodology (software) incorporating a suite of models and tools, and the end-users guidance manual.

The stages include: stakeholder engagement through interviews, tools workshop, and communications (e.g. newsletter); framework development (methodology covering eight research themes): building and testing the modelling platform (technical tools review, software); and synthesis and dissemination of the findings (framework launch). There could also be several special projects (if funding permits) to examine: mixtures of pollutants; detailed models; comparison of UK and EU case studies; pollutants & tradeoffs in alternative energy systems & biomass; environmental forensics; and risk & uncertainty.

For further information please contact: Ms Carol Pettit, PUrE Coordinator, at the University of Surrey, Centre for Environmental Strategy, Guildford, Surrey, GU2 7XH, or call us at 01483 686687 or email c.pettit@surrey.ac.uk

Also, see SNIFER's website: www.sniifer.org.uk, or call us on 0131 557 2140 or email info@sniifer.org.uk