

Workshop invitation

Interdisciplinary approaches to assess and model the urban water-energy nexus

Karlsruhe, July 31st and August 1st 2017

Karlsruhe Institute of Technology, Institute for Technology Assessment and Systems Analysis (ITAS)
University of Stuttgart, Institute for Sanitary Engineering, Water Quality & Solid Waste Management
(iswa)

Motivation and Background

The provision of water and energy is a global challenge aggravated by increasing population and climate change. An integrative water and energy management can help saving resources and improve the sustainability – especially in urban regions like (mega-) cities where these problems are prominent. However, modelling and assessing sustainable water and energy supply in urban areas is **highly complex** and requires **interdisciplinary research** to combine knowledge on the following **key aspects**:

- **Modelling framework:** limitations and challenges of water/energy models.
This relates to questions on how to deal with different system boundaries or integrate different modelling tools.
- **Sustainability performance:** assessing sustainability in the water-energy nexus.
Questions arise on what indicators address the interlinkages between the water and energy sector, which set of indicators is essential for a specific context and how to deal with different scales of indicators (e.g. hydrochemical parameters versus sustainability indicators on a national level).
- **Practical application:** drivers and barriers of implementing integrated solutions.
Aspects must be considered for example how to communicate model results to the relevant decision makers and integrate stakeholders in the successful implementation of solutions.

Some aspects are relevant for all these research topics or are overlapping, i.e. dealing with **data uncertainties**, with **trade-offs** between sectors or **communicating complex results**. The workshop shall **promote exchange** amongst **young researchers** dealing with some or several of these aspects.

Aim and concept of the workshop

Aim of the workshop is to **interlink different research approaches** on the water-energy nexus in order to identify synergies and transferable solutions. For that purpose, the workshop is based on a **highly interactive concept**: Participants shall deal with the above named aspects in interdisciplinary groups, taking into account their own research. They will shortly present their own research with a special focus on one of the key aspects. Overarching questions of different disciplines shall be identified, presented and discussed in the plenum. In that way, scientists can **learn from each other's expertise, gain insights into different approaches** and **find new perspectives on their own research**.

Additionally, experts on the water-energy nexus field will give insights into their research and experience. Confirmed speakers are **Dr. Harald Schönberger (iswa Stuttgart)**, expert on water management and industrial environmental protection, **Dr. Manfred Schütze (ifak Magdeburg)**, expert on simulation of urban water and resource systems and integrated planning tools, and **Dr. Helmut Lehn (ITAS Karlsruhe)**, expert on sustainability in the water-energy sector.

Participants

The workshop addresses doctoral and postdoctoral researchers of all disciplines relating to the water-energy nexus. Participants will be asked to present their research on a maximum of 4 slides (PowerPoint or similar format) with a special focus on one of the key aspects.

Application

Please apply with a short **motivation letter** (~ 500 words), outlining your **ongoing and future research** interests. Please choose one of the three **key aspects** (modelling framework, sustainability performance or practical application) and briefly describe how your work is related to it.

Apply until 10th of July (extended application deadline) by sending your motivation letter to the contact listed below. You will get feedback about your application by the 14th of July.

Venue and further information

There is **no registration fee**. Hotel costs from July 31st to August 1st will be covered by the organiser, as well as the cost for a networking dinner in the evening. You are asked to cover your own travel cost.

The workshop will take place at the Institute of Technology Assessment and Systems Analysis (ITAS), Karlstr. 11, 76131 Karlsruhe

For the application or further questions, please contact: Annika Weiss: Annika.Weiss@kit.edu, Tel: 0721-608 -26721

Organisation team: Annika Weiss, Franka Steiner and Jasmin Friedrich (ITAS)

Planned Agenda

Monday, July 31st

09:30 – 10:00 Coffee and welcome

10:00 – 10:30 **Keynote Dr. Harald Schönberger**

10:30 – 13:00 Presentation of individual work and discussion of major challenges in thematic groups

13:00 – 14:00 Lunch

14:00 – 14:30 **Keynote Dr. Manfred Schütze**

14:30 – 16:00 Presentation of discussion results of the thematic groups

16:00 – 16:30 Coffee break

16:30 – 17:00 Discussion of linking aspects and challenges between different methodological approaches

17:00 – 17:30 Networking activity

18:00 Dinner

Tuesday, August 1st

09:00 – 09:30 **Keynote Dr. Helmut Lehn**

10:00 – 11:30 Interactive group work – Experience different perspectives on the urban water-energy nexus

12:00 – 13:00 Lunch

13:00 – 14:00 Feedback and next steps

Acknowledgements

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