# IN-SOURCE

INtegrated analysis and modelling for the management of sustainable urban FWE ReSOURCEs

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## Abstract

As cities across the globe confront rapid change, they face common metabolic challenges to provide food, water and energy (FWE) supplies and to ensure healthy, socially balanced and economically productive communities. In this context, governments, utilities, developers, investors and other decision-makers need tools to identify, quantify and visualize cross-sectoral and cross-media impacts to FWE systems from various decisions – from urban development strategies to CO2 mitigation/-adaptation plans to FWE infrastructure investments.
The proposed IN-SOURCE project will develop a shared urban data and modeling framework to help cities analyze and characterize FWE systems and nexus interrelationships. Shaped by urban stakeholder requirements, this framework will utilize a common urban 3D data model applicable to regions and cities in Europe and the United States.
The IN-SOURCE modeling framework will: (a) simulate impacts of land use, climate change and decentralization of FWE supply infrastructure in cities with different densities and under multiple constraints in order to ensure adequate energy, water and food distribution and storage capacity; (b) configure alternative urban and regional scenarios toward integrated carbon neutral and sustainable infrastructure, based upon decentralized and increasingly autonomous FWE supply; and (c) analyze scalability and transferability of prototype solutions to other cities.

## Projektkoordinator

- AIT Austrian Institute of Technology GmbH

## Projektpartner

- Universität für Bodenkultur Wien