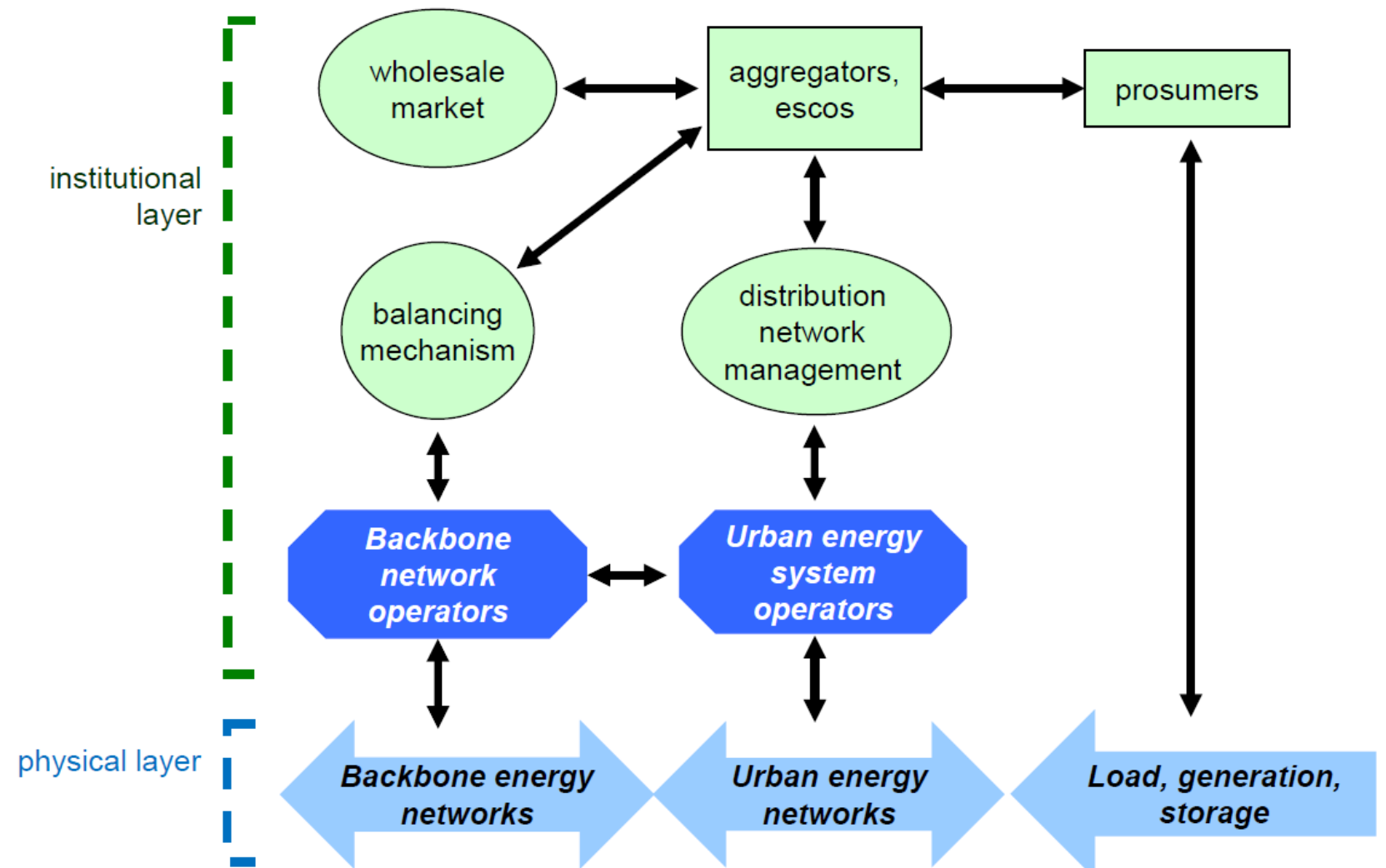


STEP-UP

Sustainable urban development in the context of economic transformation and climate change needs to be underpinned by the transformation of urban energy systems, in terms of urban energy efficiency, local renewable energy production and intelligent network development. The fundamental question is what is the optimal structure for an efficient, clean and resilient urban energy system? The design and operation of sustainable urban energy system is a complex task, since it relies not only on technology innovation, but also on policy making, market design and business cases. Electrification and digitalization of urban systems strengthens inter-sector links, both positive and negative. Alternative Socio-Techno-Economic pathways of sustainable urban energy development must be understood to provide tools and methods that will enable stakeholders to realise the necessary transition.



Aim/objective

The aim of STEP-UP is to provide an integrated planning and deployment strategy for urban energy systems and their enabling infrastructure in EU and Chinese cities. We will develop simulation tools and control algorithms, test business models, create an integrated strategic planning evaluation framework and provide roadmaps that cities can use to efficiently develop a sustainable energy system.

Approaches/methods

We will develop modelling tools and use them to analyse urban energy transformation. They can be applied to enhance existing market and regulatory frameworks, develop appropriate tools for operating intelligent urban energy systems and consider optimal citizen-centric design of urban energy infrastructure. We will identify sources of risk and uncertainty and their implications.

Expected results and impacts

STEP-UP will provide evidence and a pathway for the sustainable urban energy transformation in cities. It will deliver methodologies and techniques for enabling multi-stakeholder decision making and business models to facilitate this transition in a cost effective way. Case studies of Beijing, Delft, London and Suzhou will be used to build road maps for the future.

STEP-UP - Socio-Techno-Economic Pathways for sustainable Urban energy development

Duration: Starting in 2019, ending in 2022 at the latest

Internet: jpi-urbaneurope.eu/project/step-up/

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Budget: €859,934

Partners: Imperial College London – Business School, Delft University of Technology – Faculty of Technology, Policy and Management, Tsinghua University (THU), Zhejiang University (ZJU).

Involved countries

- China
- Netherlands
- The United Kingdom

The Sustainable and Liveable Cities and Urban Areas call

The pilot call Sustainable and Liveable Cities and Urban Areas organized by JPI Urban Europe and the National Natural Science Foundation of China (NSFC), inviting interdisciplinary Sino-European consortia opened on January 31st, 2018.

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