



A VIEW TO FUTURE URBAN ENERGY SYSTEMS MODELLING AND ANALYSIS

Dr. Jimeno A. Fonseca
Senior Researcher and Project Coordinator
Multi-Scale Energy Systems for Low-Carbon Cities (MuSES)
Future Cities Laboratory, Singapore ETH-Centre

Monday, 18 June 2018
3.00 pm to 4.30pm
ESI Conference Room
29 Heng Mui Keng Terrace
Block A, #10-01, Singapore 119620

Please send us your name, organization and email address via the ESI website [here](#). For enquiries, please contact Ms. Jan Lui at 6516 2000.

Synopsis

Future urban energy systems will consist in consolidated supply chains of fuels, renewable energy and electricity. These supply chains will span multiple systems and seamlessly connect buildings, vehicles and energy resources. Today, there is still little knowledge on how to strategically put in place and orchestrate such a system of systems. Urban energy systems models are becoming an essential tool to evaluate scenarios of urban development and determine optimal strategies to layout energy infrastructure in cities, especially at the district scale.

This talk will elaborate on the state-of-the art of urban energy systems modelling and analysis at the district scale. It will provide examples of key current applications of these models and deliver an overview of future challenges in the field.

About the Speaker

Dr. Jimeno runs a group leader in urban energy systems research at the Future Cities laboratory of the ETH Zurich. The group studies how to mitigate the impacts of urbanisation into the energy consumption of cities. Besides management of agile teams, he specialises in modeling, simulation and data analysis of multi-scale energy systems, covering systems such as buildings, district heating and district cooling.

In late 2015 he created the City Energy Analyst (CEA), one of the first open-source tools for the optimisation of urban energy systems. He created this tool with two objectives in mind. The first was to make easier to academics to build upon the current state-of-the art. The second was to give a quick access to cutting-edge planning tools to industry and government. Today, several universities and research institutes actively contribute to the further development of the tool.

In the past, Jimeno participated in award-winning projects of building energy efficiency in Europe and Latin America. His passion lies into finding economically attractive, and low carbon technical solutions for cities. His current research interest lies in the areas of cyber-physical energy systems and integrated urban planning.