The Worshipful Company of Water Conservators

You are cordially invited to join the Water Conservators' January Webinar

Decarbonising the City of London: Plotting a transition to a multi centric heat pump network.

Wednesday 26th January 2022 5.30pm to 6.45pm

Presented by Professor Simon Spooner, Principal Scientist, Atkins Infrastructure

About this Webinar

The City of London Corporation's Climate Action Strategy commits to net zero by 2040. By far the largest direct greenhouse gas emissions from the City of London are from burning natural gas to heat buildings. Better insulation levels can reduce this requirement but for existing buildings there are limits to the practical levels of improvement and for new buildings extreme efficiency involves compromises with building function and aesthetics. District heating systems using combined heat and power are more energy efficient solutions overall but are rarely economic and the insulated hot pipe networks are impractical. Electric heat pumps have emerged as the practical and high efficiency solution eliminating combustion and emissions at the point of use and dramatically reducing the total energy demand overall. Individual building ground source systems require expensive and impractical excavations or boreholes and air sourced systems require large fan arrays and struggle in severely cold weather. Something better is needed by 2040

A possible solution for the City of London would be to construct a network of low to medium temperature water circulation to which users can connect their building systems and extract heat using heat pumps or deposit excess heat from their processes or building cooling. Multiple additional sources and sinks for heat such as the river Thames, the underlying aquifers and the transport network can be connected via heat pumps to supply heat or provide sinks for excess heat as required. Data centres and industries can also use the network to reuse heat under circular economy principles.

The technical challenges of implementing such a system are not that great, all the components are available today, however, the financial, institutional, and regulatory challenges are considerable. In this talk I will introduce the technical premise and then explore ways that such a system could be implemented applying the principles of a combustion transition. This is a framework of metrics and enabling funds to facilitate multiple stakeholders to cooperate to deliver major infrastructure innovations that in this case could help the City of London to achieve its net-zero targets by 2040.

About the Speaker

Prof Simon Spooner is an environmental scientist applying scientific models combined with social, economic, political and regulatory methods to address the challenges that we face and help build better infrastructure systems. Currently his main activities are: as a senior expert advisor on the UK Health Security Agency programme to develop wastewater epidemiology based responses to the Covid-19 pandemic; applying his SimBasinQ river basin water quality model to address the impact of wastewater discharges on our rivers; and developing nature based catchment solutions to flooding, water quality, water resources, biodiversity and carbon sequestration. He has developed the combustion transition framework, an innovative approach to integrating GHG emissions reductions and land-use based regeneration of natural processes with a framework of metrics and economic tools to facilitate an accelerated transition to net-zero.

Over the last 30 years as a consultant with Atkins and before that Mott MacDonald he worked about half his time overseas, mostly in China, on major World Bank, EU and UK government projects in urban environment development, energy systems and environmental policy. He was Technical Director for water and environment for Atkins in China mostly delivering urban planning projects. More recently he worked in partnership with KPMG for the UK FCDO in China on the development of environmental governance processes and access to international financing for infrastructure projects under China's Belt and Road programme. In the UK he mostly worked for water companies in wastewater and river basin management and in water industry regulatory processes.

He is an honorary professor at Nottingham university in Ningbo and UK campuses and a visiting professor at many universities in China as well as Cambridge University in UK. He has written and edited a number of books on water and environmental management, regulation and adaption of European approaches to China for OECD, FWR, EU and Chinese publishers. What he really enjoys is building on the latest science and digital systems to innovate and find simpler integrated solutions to complex problems.

Register For This Webinar

To attend this webinar you will first need to register via the link below to Eventbrite. Attendance is free, there is no charge to attend. You will then receive a return email from Eventbrite with the details to join the webinar via zoom. You need to keep those details to join the webinar. Any problems contact rob.casey1@hotmail.com at least 24 hours before the start of the webinar.

https://www.eventbrite.co.uk/e/decarbonising-the-city-transition-to-a-multi-centric-heat-pump-network-tickets-241419240447