

## **Analysis of energy end-use data for a CO<sub>2</sub>-free district (2 positions available)**

**Description** DUWO is in the process of launching a sustainability flagship at its largest campus, Uilenstede, in Amstelveen Noord. The municipality of Amstelveen Noord has designated Uilenstede as the first district to become natural gas-free. DUWO is now busy with transforming the area to the 'greenest campus in Europe.'

This transformation comes with many challenges, research questions and requires testing and implementation. Above all it requires a deeper understanding of how much energy building occupants really use on a seasonal and hourly basis. With this information, DUWO can make more informed decisions about their buildings and renewable energy systems that support the transition to a CO<sub>2</sub>-free district.

This project focuses on developing user profiles of the buildings situated at Uilenstede.

**Method** Analyse actual energy use by examining (smart) meter data of the buildings operating at Uilenstede. Identify the energy flows from central supply into the Combined Heat and Power plants. Identify the heat flows via system and distribution losses to delivered energy to the multi storey student home buildings via distribution losses to end use in living spaces. Develop end use profiles for space heating and hot water. Compare the intermediate steps with benchmarks and simulations.

Identify the central electricity production, on site PV generation and purchased electricity and determine the direct use of on site generated electricity, the exported energy and determine the electricity profiles of end users.

The majority of buildings are student homes of different ages with different insulation levels, ventilation systems and heating systems. There are a few other functions such as offices, shops and meeting places.

**Outcome** User energy profiles of the buildings operating at Uilenstede.

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