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Title:	PhD Researcher at Delft University of Technology, Delft, Netherlands	
Presentation title:	**Energy Renovations in the Existing Housing Stock – Reassessing the Savings Based on Actual Energy Consumption**	

Energy renovations offer unique opportunities to increase the energy efficiency of the built environment. And for the existing housing stock, energy renovations are the most important solution. Usually, energy savings, achieved after renovating, are based on modelling calculations. However, patterns of the predicted energy reduction, in most cases, differ from the actual energy consumption. Monitoring is essential and can provide valuable information concerning the energy savings that can be achieved, in terms of both actual and predicted energy consumption. In this paper, the effectiveness of energy measures is re-assessed based on actual consumption data. To do so, we analyse, first, the energy efficiency state of the stock in the Netherlands. We use a monitoring system, which contains information about the energy performance of around 60% of the Dutch non-profit housing sector (circa 1.2 million dwellings). This system is based on the Dutch energy labeling method. We connect the data from the monitoring system to actual energy consumption data, from Statistics Netherlands, on a microdata level. Furthermore, we assess the type of energy renovations applied at the housing stock. Using longitudinal analysis methods, from 2010 to 2014, we identify the energy efficiency improvements of the stock and determine the effectiveness of different measures, and combinations, in terms of actual energy savings. The results reveal the savings of different efficiency measures and highlight the significance of the actual energy consumption when a renovation is planned or realized. In other words, we provide insight into the effect that the thermo-physical characteristics of dwellings have on efforts to make the existing housing stock energy-efficient.

Short CV:

Faidra Filippidou is a PhD candidate at Delft University of Technology. She holds a diploma in Production Engineering & Management from Democritus University of Thrace and a MSc in Sustainable Energy Technology from Delft University of Technology. At the end of 2013 she started her PhD on the topic of achieving energy neutrality through energy renovations in the existing housing stock.