Energylab Nordhavn: An integrated community energy system towards green heating and e-mobility - DTU Orbit (07/06/2019)

This paper analyzes the green potential of a newly developed urban community, i.e., Nordhavn, in Copenhagen, Denmark from a planning perspective, wherein the energy sector of power, heat and transportation will be developed as an integrated energy system solution. Based on an hour-by-hour analysis wherein the generation and demand in each energy sector are balanced, the analysis explains how different levels of penetration of centralized heat pumps (HPs) and electric vehicles (EVs) would influence the energy performance of this integrated community energy system. The performance of the integrated energy system is evaluated from the perspectives of annual fuel consumption, electricity import, system cost and CO2 emission, etc.

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