

A compromise solution between cost and comfort in a community of buildings with the possibility of local energy exchange

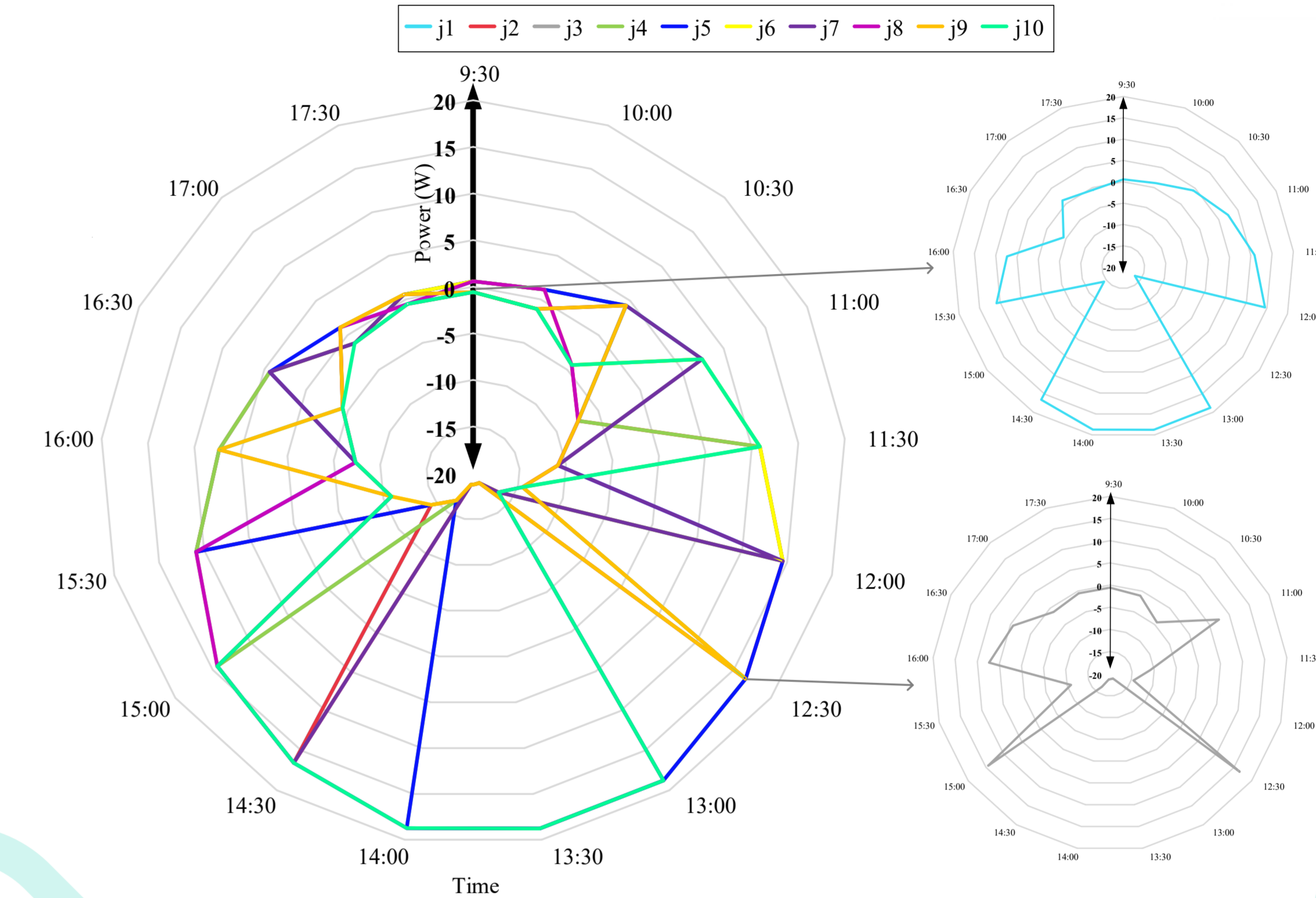
Introduction

The energy management strategies usually aim at minimising different costs (e.g. energy bill). However, occupants' comfort will be affected if we try to decrease cost. Therefore, a better strategy is to make a trade-off between cost and comfort.

An important practice that could be considered for a group of building is enabling a local market within their community. This strategy can decrease costs and provide more interaction between different parts of energy systems.

Building-to-building strategy

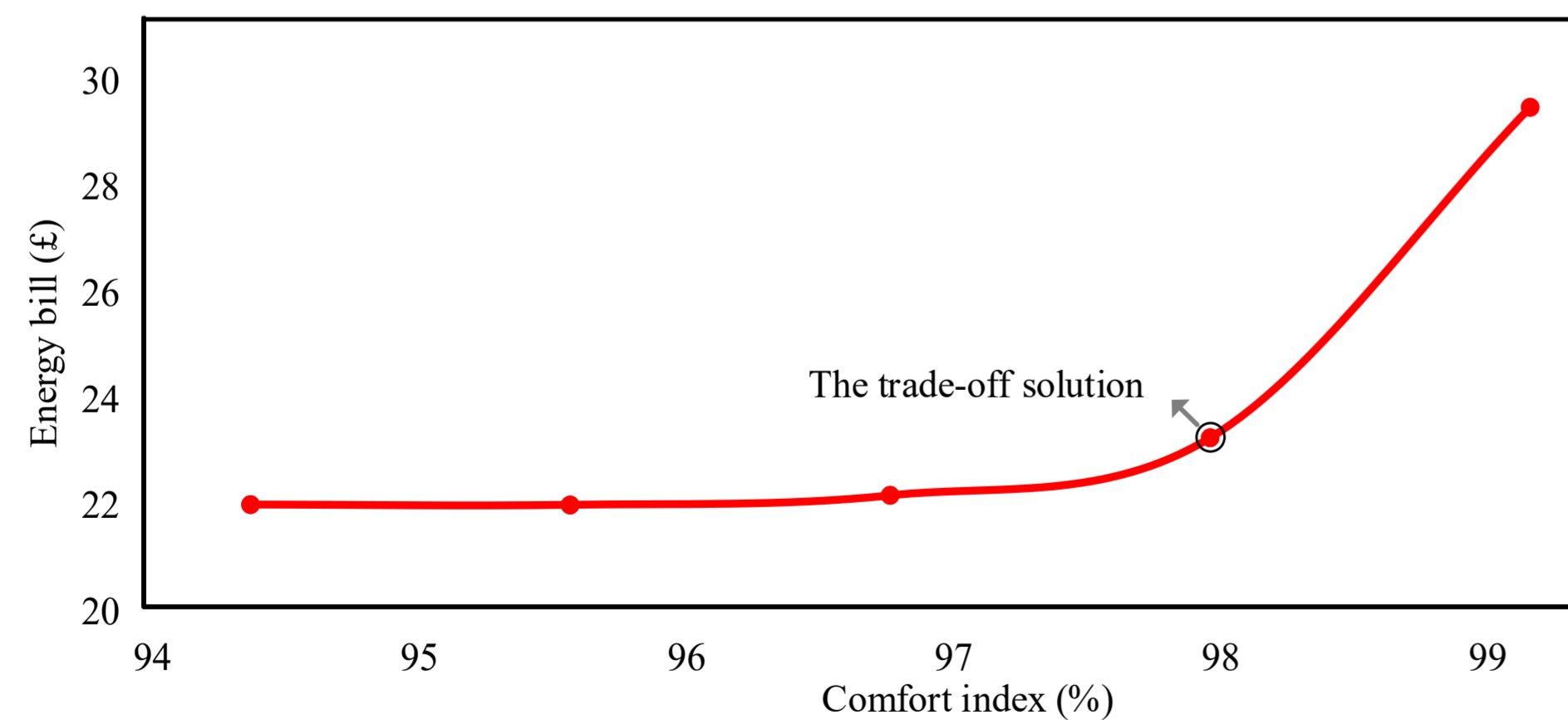
This strategy enables the interaction between a group of buildings and activates a local market in a community level.



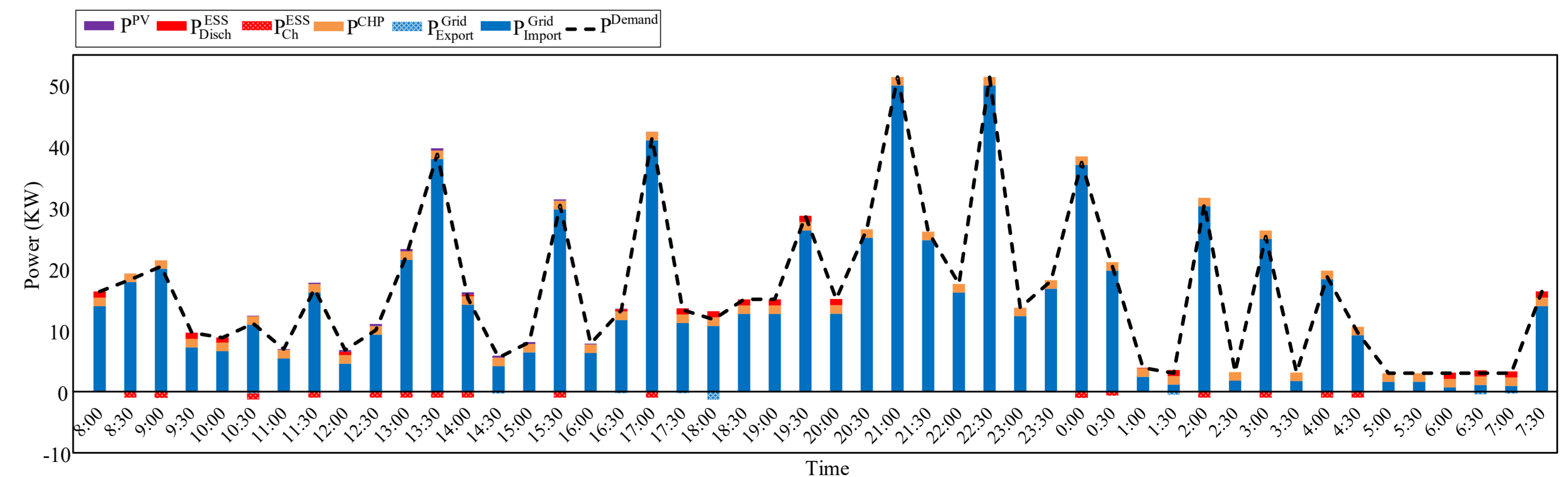
This figure shows the power exchange between 10 buildings in a community. The less occupied buildings can sell power.

A trade-off between cost and comfort

In order to achieve economic goals while considering the comfort of building occupants, it is important to consider both goals simultaneously.



This figure shows the conflicting nature between cost and occupants' comfort. Also, suggests a trade-off solution.



An optimal control strategy keeps the balance of generation capacity and demand consumption.

