

Case Study: Energy Demand and Supply

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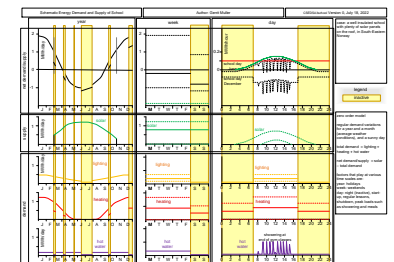
Abstract

This is a case study in conceptualizing supply and demand of energy. Many engineers lose themselves in extensive traces of usage data. These traces are quite useful for analyzing variations and peaks in demand and supply. However, they may obfuscate insight in the repeating patterns.

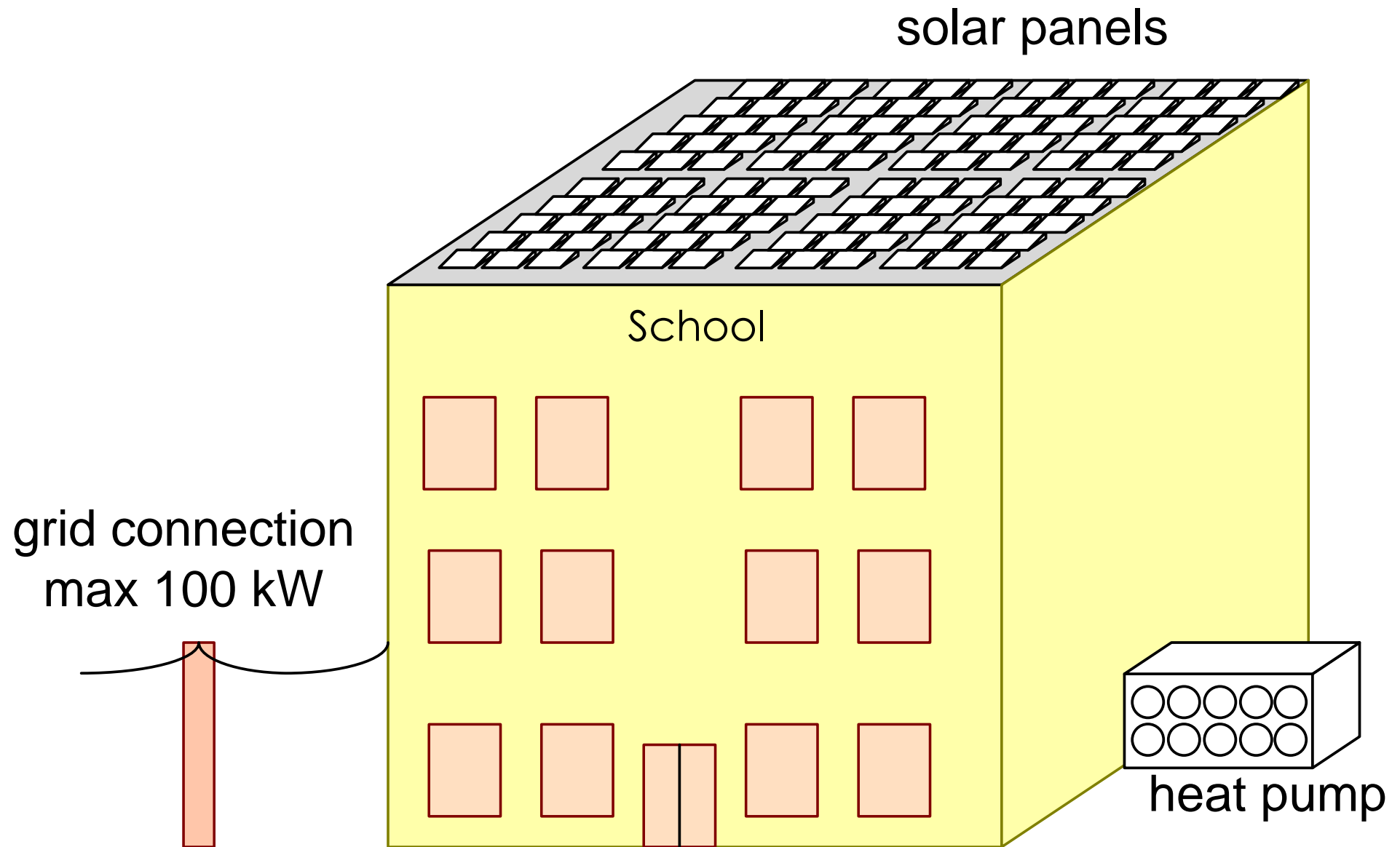
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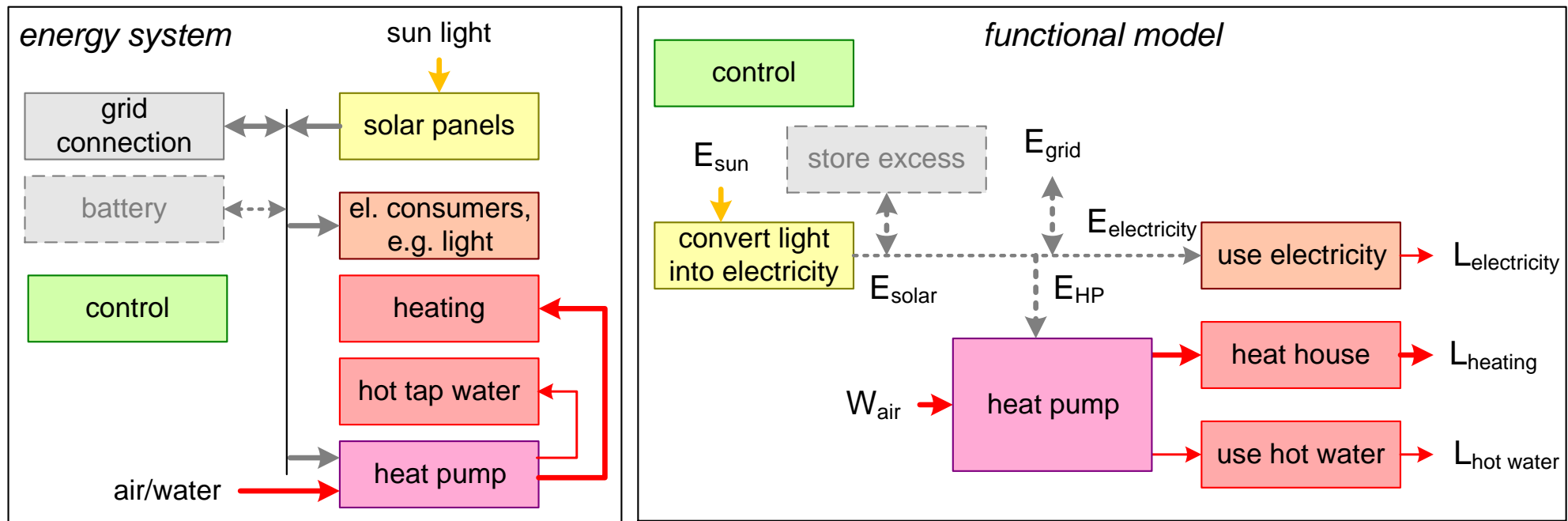
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Case Overview



Case Models



case: a well insulated school
with plenty of solar panels
on the roof, in South-Eastern
Norway

legend

inactive

zero order model

regular demand variations
for a year and a month
(average weather
conditions), and a sunny day

total demand = lighting +
heating + hot water

net demand/supply = solar
– total demand

factors that play at various
time scales are:

year: holidays

week: weekends

day: night (inactive), start-
up, regular lessons,
shutdown, peak loads such
as showering and meals

year

week

day

