Optimizing residential housing units with district heating in Finland and managing individual utility bills

MClimate

ABOUT OUR CLIENT

The client, under NDA, is one of the leading Nordics Telecom providers.

CHALLENGES

In 2019 we were approached by one of the biggest telecoms from the Nordics as a technological partner in a new venture they were developing – offering heat optimization and energy efficiency to residential buildings, using common areas and individual room control smart radiator thermostats, aiming to optimize and lower the overall heat cost and CO2 impact of the buildings by up to 35%.

Residents were using inefficient manual TRV control and were rarely interacting with their heating not reducing their temperature at night or when opening a window, for example. Their lviign and working patterns were not considered by the centralized system which led to inefficiencies in the the winter (6 months).

GOAL

It was important to install a smart long-range low power solution not limited by the scalability, security, penetration range and battery life of traditional short-range connectivity solutions allowing for:

- ✓ Tenants to control the target temperature from the radiator thermostat and an application on their phones
- ✓ Building management company to set up schedules for common parts / monitor individual tenants consumption
- ✓ A white label device with customised design
- ✓ API control and deployment of MCloud on telecom's local infrastructure
- ✓ Support services in integrating back-office system with MClimate API install and efficient solutions to all tenants.

SOLUTION

Customers opted to use MClimate's Vicki LoRaWAN® smart thermostat to optimise energy costs in over 100 residential buildings built between 1920 and 1975 with an average bill of EUR 60,000 / year each as our battery-powered, wireless device can be be easily retrofit in any building and have seamless communication throughout floors.

The tenants are able to easily control the target temperature manually from Vicki LoRaWAN® from a LED digital display showing target temperature, or use a mobile application in order to remotely make changes reflected in the central IoT platform. Building management companies started using schedules for the common parts, which allowed them to reduce energy waste and CO2 emissions of the building when those spaces are not used. Tenants were recommended schedules for nightly and daily temperature reducing costs on an individual apartment level and heating data was used for both cost allocation and re-balancing at each site.

RESULTS AND BENEFITS

70,000+
Vicki Smart TRVs installed

15-35%
Estimated reduction of the heating costs

100+
Building's installations completed

MClimate worked closely with the telecom to configure a complete and affordable IoT white label solution by developing a custom gateway according to telecom's requirements and within only 2 months from the project start, MClimate and the client started deploying the energy efficiency solution in Finnish buildings before the heating season in 2019/2020.

MClimate's team continuously supported the telecom with valuable know-how about the residential heating patterns on the tenants throughout the year and it is now calculated that the first year alone generated energy savings of 15-35% and the devices installed paid for themselves in the first season of use with immediate decarbonisation effect for the buildings.

The solution significantly reduced the CO2 footprint of those buildings (by 14 eqCO2 tonnes / 7 passenger cars taken off the road equivalent in the smallest block of flats), and increased the comfort of all occupants, allowing them to become active part of their heating process. Our customers' peace of mind was assured with the high security MClimate provided with all user information data safety guaranteed by a Security Mark issued by Traficom.