iSERVcmb Best Practice

Electricity savings of 36% per year was found with HERO (tool for automatic online ECO detection with use of long-term monitored data for specific HVAC system.

SPAR Trbovlje

SPAR Slovenia – **SI**

Introduction

This report summarizes the results of SPAR Slovenia participation to the iSERVcmb project with regard to its HVAC system energy consumption. The report refers to the period from 2012 to 2013.

iSERV Achievements

Energy Savings
Electricity: 24232 kWh

36%
Total HVAC electrical consumption reduction since participation

Cost Savings
Electricity: No data €/m²

Emissions Reductions
Electricity: No data CO2/m²

Investment to achieve savings
No data €/m²

	Key Figures
Location	Trbovlje, Slovenia
Sector	Retail
Construction Date	2011
Project Size	1798 m²
EPC	N/A
Sub-metering Level	Party Metered
Data Frequency	15'
Data Collection Protocol	Manufacturer on board data collection system
Data Sending Protocol	Automatically extract data & manually send to an email address
Nature of Savings achieved	**HVAC Equipment Replacement** **Improved Operating Schedule** **Air Filter Replacement**
No. HVAC Systems	2
HVAC Components	☐ Heat Generators ☒ Cold Generators ☐ All-in-One Systems ☐ Heat Pumps ☒ Air Handling Units ☐ Humidifiers ☐ Dehumidifiers ☒ Pumps ☐ Storage Systems ☐ Terminal Units ☐ Heat Recovery ☐ Heat Rejection

Building Profile

SPAR Trbovlje is a shopping center with conditioned gross internal area (CGIA) of 1798. Cooling is provided by two packaged chillers, with a total nominal cooling capacity of 70, 78 kW

Building Management System

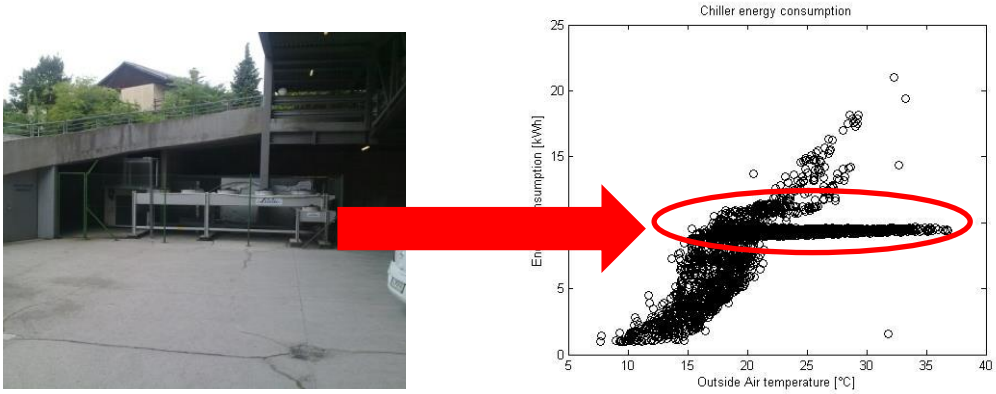
The building system operates on an optimized stop and start. The building owner carries out measurements on HVAC systems and provided it into HERO online database which were also used for this case study. The building is occupied 08:00 to 20:00, Monday to Friday, from 8:00 to 17:00 in Saturday and from 8:00 to 12:00 in Sunday. Outside of these hours, setback points are used.

Savings of 24, 23 MWh/a due to optimized HVAC control and upgrade of HVAC system

The data provided starts at August 2012 and includes energy consumption of electricity. HERO tool was used to provide with the result about possible ECO`s to reduce electricity energy use on HVAC system.

ECO`s which were found on HVAC system were next:

- To improve operating schedule
- To clean or replace filters
- To find appropriate working space for cold generators
  Figure below shows the malfunction of the cold generator which has influence on higher electricity energy use because of inadequate working space (closed or basement).



These electricity savings represent a reduction of 36 % from the initial electricity energy use on HVAC system.

The annual electrical savings achieved in the building are currently 24232 kWh achieved by optimized HVAC control and upgrade of HVAC system.

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