

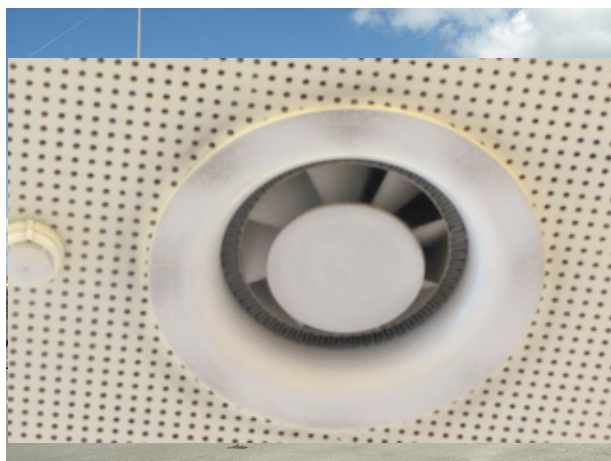
## iSERVcmb Best Practice

Average electricity savings of 25% per year by adjusting the operation of the A/C equipment.

### UP-Porto 25 25 – PT

#### Introduction

This report summarizes the results of all 21 supermarkets participation on 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: 19 kWh/m<sup>2</sup>.year

**25%**

HVAC electrical  
consumption reduction

##### Cost Savings

Electricity: 2,8 €/m<sup>2</sup>.year

##### Emissions Reductions

Electricity: 0,5 kgCO<sub>2</sub>/m<sup>2</sup>.year

##### Investment to achieve savings

1,5 €/m<sup>2</sup>.year



	Key Figures
Location	Portugal
Sector	Retail
Construction Date	From 1995 to 2013
Project Size	19389 m <sup>2</sup>
EPC	N/A
Sub-metering Level	Party Metered
Data Frequency	Hourly
Data Collection Protocol	Meters and sensors attached to BMS
Data Sending Protocol	Automatically extract data & manually send to an email address
Nature of Savings achieved	<b>Improved Operating Schedule</b> <b>Identified Oversized HVAC component(s)</b>
No. HVAC Systems	21
HVAC Components	<input checked="" type="checkbox"/> Heat Generators <input checked="" type="checkbox"/> Cold Generators <input checked="" type="checkbox"/> All-in-One Systems <input checked="" type="checkbox"/> Heat Pumps <input checked="" type="checkbox"/> Air Handling Units <input checked="" type="checkbox"/> Pumps <input type="checkbox"/> Terminal Units <input checked="" type="checkbox"/> Heat Recovery <input type="checkbox"/> Heat Rejection

## Buildings Profile

The YY Group is a supermarket brand participating in iSERVcmb with 19389 m<sup>2</sup> conditioned gross internal area, with a single floor buildings located at 21 different places over Portugal.

The average of the supermarket are mainly a single place served by 2 AHU with heating and cooling variants. The buildings have secondary activities like a small office, a warehouse and toilets which are served by other HVAC systems. Cooling and Heating are provided mainly by independent split systems, with a total Nominal Cooling and Heating Capacity of 1950 kW and 1992 kW, respectively.

## Buildings Management System installed

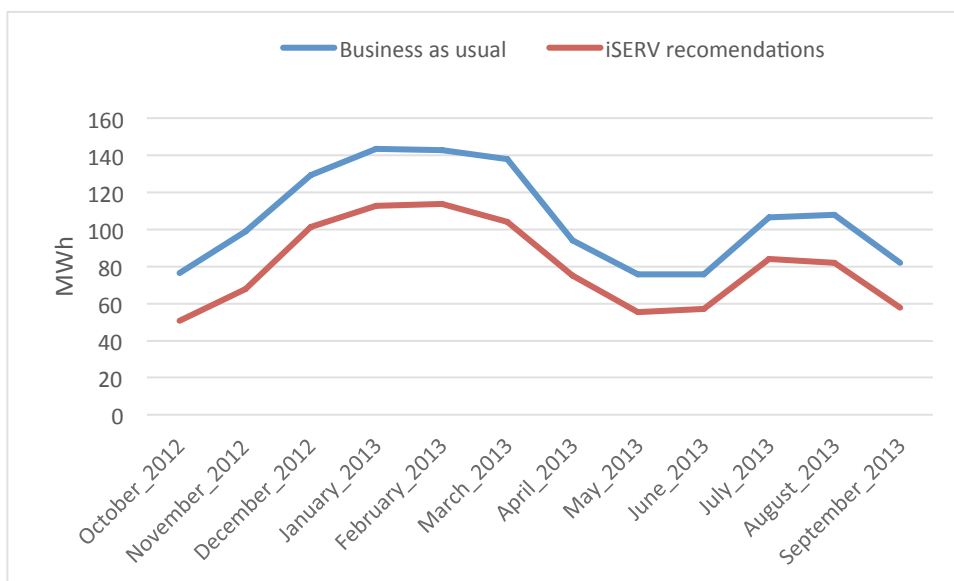
The buildings systems are controlled by a BMS. The consumptions monitoring is achieved by this BMS system. The building is occupied mainly from 9am to 9pm, 7 days/week.

## Savings of 334 MWh/y due to optimized HVAC control

The data provided starts at October 2012 and includes energy consumption electricity only of the HVAC components. Energy saving opportunities have been identified in the HVAC systems with a total estimated savings for all buildings of 334 MWh on the analysed period.

This Energy conservation opportunities are mostly related to system control and oversizing of the HVAC

equipment. This measures are represented in the figure on the right and include AHU control improvement, turn off equipment when not in use and adjust the cooling and heating demand for the real requirements of the building. The estimated result of this measures could represent a reduction of 25% in the HVAC systems and consequently in the electricity use, without major investments. The reduction of the total annual building energy use can be reduced to 19 kWh/m<sup>2</sup>.year.



The annual electrical savings achieved in the 21 buildings are estimated in 334,074 MWh/year on the HVAC systems. This translates to annual electricity savings from the HVAC alone of approximately EUR 50 000 €/year.

[www.iSERVcmb.info](http://www.iSERVcmb.info)

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how energy efficient are you really?



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