

## iSERVcmb Best Practice

Electricity savings of 14,9% per year through awareness measures and optimised control for the HVAC system.

### Building number 9

GR

#### Introduction

This report summarizes the results of an Electronic store's participation to the iSERVcmb project with regard to its HVAC system No 1 energy consumption. The report refers to the period from 2012 to 2014.

#### iSERV Achievements

##### Energy Savings

Electricity: 13,457KWh/m<sup>2</sup>

##### Cost Savings

Electricity: 1,14 €/m<sup>2</sup>

##### Emissions Reductions

Electricity: 15,7KgrCO<sub>2</sub>/m<sup>2</sup>

##### Investment to achieve savings

N/A €/m<sup>2</sup>

**14,9%**

Total HVAC system electrical consumption reduction since participation



	Key Figures
Location	Greece
Sector	Retail
Construction Date	2008
Project Size	Sales area: 3000 m <sup>2</sup> (total building area: 3350 m <sup>2</sup> )
EPC	N/A
Sub-metering Level	Party Metered
Data Frequency	15'
Data Collection Protocol	Stand Alone system
Data Sending Protocol	Automatically extract & send to an email address
Nature of Savings achieved	Improved HVAC Control
No. HVAC Systems	1
HVAC Components	<input checked="" type="checkbox"/> Heat Generators <input type="checkbox"/> Cold Generators <input type="checkbox"/> All-in-One Systems <input type="checkbox"/> Heat Pumps <input type="checkbox"/> Air Handling Units <input type="checkbox"/> Humidifiers <input type="checkbox"/> Dehumidifiers <input type="checkbox"/> Pumps <input type="checkbox"/> Storage Systems <input checked="" type="checkbox"/> Terminal Units <input type="checkbox"/> Heat Recovery <input type="checkbox"/> Heat Rejection



### Building Profile – HVAC Systems

The electronic store, No2, is a retail store located in Thessaloniki, GR.

The HVAC system No 1 serves 2 floors. The sales area is in two floors -the ground floor and the first floor. The ground floor (sales area) is 1500m<sup>2</sup> and the first floor (sales area) is 1500m<sup>2</sup>, too. The total conditioned area of the building is 3350 m<sup>2</sup>. The office area (350m<sup>2</sup>) is served by the HVAC system No2 (refer to case study: ‘Electronic store No2, HVAC system No2’).

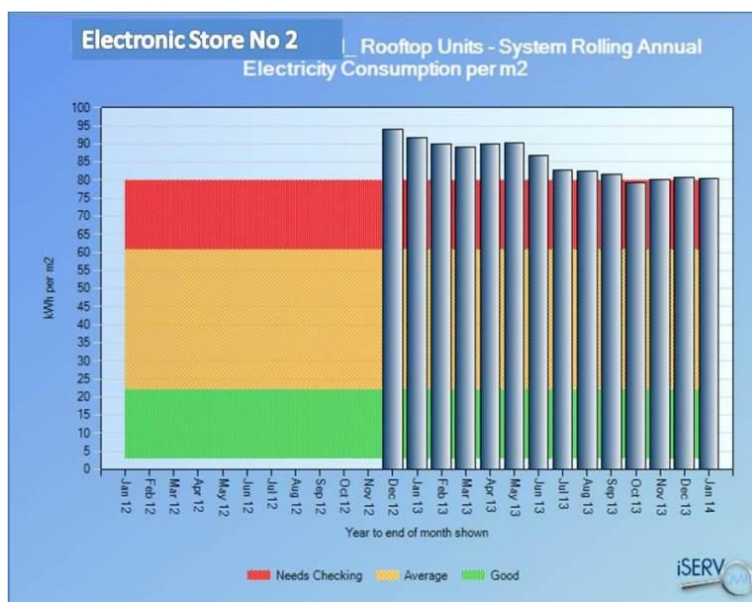
The sales area (ground and first floor) 3000 m<sup>2</sup> is served by 4 rooftop DX Packaged Heat Pump Units with heat recovery. Each DX Packaged Heat Pump Unit has a nominal cooling/ heating capacity of 141KW/136.8KW with a total nominal cooling/heating capacity of 564KW/547.2KW. The manufacturer’s design conditions are 35°C outdoor and 26°C indoor. The cooling requirement of this store is typical of others insomuch as there is a lot of internal gain due to lights, and other equipment heat loads. The HVAC system appeared to be in good condition, and well maintained. The maintenance of the building is once in a month or once in two months.

### Building Management System installed

The HVAC system is controlled by a BMS, and the system operates on an optimized stop and start. The units are operating at a set point of 26°C in cooling and operate between 08:00 and 21:00 Monday to Saturday. The units operate individually reacting to their own control set point but are under universal time clock control. The store also has a remote dial in facility so time clock, control set point can be altered and fault condition monitored.

### Savings of 40.370KWh/a due to optimized HVAC control

The data provided starts at January 2012 and includes energy consumption of electricity. From December 2012 the rolling annual electricity use starts to reduce. The initial reduction from a peak of 94kWh/m<sup>2</sup>a in December 2012 to around 80kWh/m<sup>2</sup>a in January 2014 is mainly due to additional control being exerted on the HVAC system. These electricity savings represent a reduction of about 14,89% from the initial electricity use peak. The annual electrical savings achieved in the building (till January 2014) are around 40.370 kWh per annum which are from the control of the HVAC system. This translates to annual electricity savings from the HVAC of approximately EUR 3.430.



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how energy efficient are you really?

#### Contact

Margarita - Niki Assimakopoulos  
National and Kapodistrian University of Athens  
Physics Department  
Greece  
[masim@phys.uoa.gr](mailto:masim@phys.uoa.gr)



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