

## FACTSHEET

# Building Energy Management system to minimise consumption of fossil fuels and electricity

PART OF SMART SOLUTION 4: SMART LOCAL ELECTRICITY MANAGEMENT



LOW  
ENERGY  
DISTRICT

- Helps to achieve the European union's aim of continuously improving energy management within the tertiary sector
- It is estimated that using an energy management system to monitor and control the consumption of a tertiary building can lead to an almost 10% reduction in the energy consumption of the building.
- Providing a graphic view of residents' own electric and fossil fuels consumption helps build awareness and empowers them to reduce their energy footprint



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## What is the solution?

Building Energy Management Systems will be installed in all the tertiary buildings to be refurbished in order to monitor consumptions of fossil fuels and electricity. Monitoring of consumption will be carried out before and after the refurbishment for a period of two years starting from the end of the works. The main objective of the solution is to reduce consumptions by optimizing energy management and, at the same time, to evaluate the energy savings obtained thanks to these refurbishment actions.

## How does it work?

The Building Energy Management System to be installed includes an acquisition and communication module which communicates with counters, sensors and an EMS (Energy Management System) platform through an internet connected server. The solution is oriented to the end-user and personalised services will be added depending on user needs.

### Functionalities:

#### *Visualisation (15–20 minute time step)*

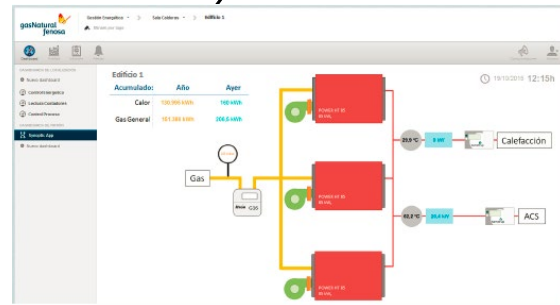
Customised report, depending on needs.

Can include:

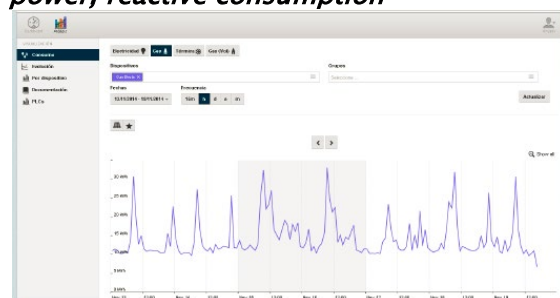
- Parameters of process (temperature, power, ...)
- Meter reading (gas, electricity, ...)
- Accumulated consumption data
- Location in map
- Monthly consumption
- Summaries and diagrams of analysed period
- Download in excel format
- Energy meter

- Level of service (temperatures, electric power, power factor...)
- Alarms

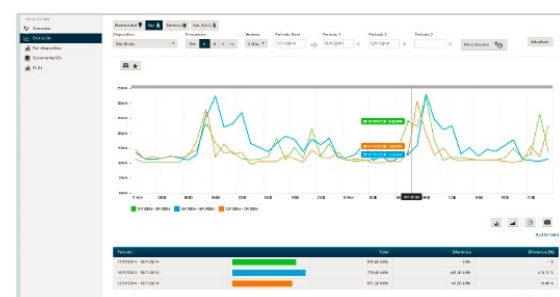
#### *Synoptic App, for the visualisation of the scheme of the system*



#### *Profile of consumption, production, electric power, reactive consumption*



#### *Comparison to a base case (consumption, contracted power, ...)*



## Business model used

The solution is offered as an added value to the refurbishment of the building and does not entail a specific business model. For this solution, the response of the client functions

as a test and will be essential to define the potential business model to apply.

## Integration with other solutions

This solution is integrated with the solution “Smart Energy and Self Sufficient Block”, which aims to reduce electric consumption in tertiary buildings through renewable energy, especially photovoltaic.

## Expected Impact

The following positive impact are expected in terms of the key GrowSmarter objectives:

### Improving quality of life:

Remote control of the monitored systems will allow ongoing adaptation of the conditions of different systems to the required comfort level of the users of the building.

### Reducing environmental impact:

The use of BEMS will enable the identification of problems in the monitored systems, giving the opportunity to stop unnecessary consumption. Continuous improvements to the control system will help achieve reduction of consumption, emissions and costs.

### Promoting sustainable economic development:

The use of the BEMS system is a sustainable solution for economic development in itself, because it helps to reduce costs by implementing an energy management policy.

## Potential for replication

Although this solution does not require special pre-conditions for replication, it is

important that the action is accompanied by an awareness raising campaign for users in order to promote diffusion on a grander scale.

### Organisational resources and knowledge required within the public administration:

According to the Directive 2012/27/UE of European Parliament, public administration already includes the use of a BEMS system to realise energy audits in tertiary sector.

### Stakeholders to be involved:

Owners and maintenance managers in tertiary sector

- Public administration
- Utilities
- Manufacturers and distributors of hardware and software for BEMS

### Potential barriers:

- Lack of involvement/commitment at decision-making level
- Lack of high-level training for the energy manager
- Lack of awareness on importance of energy management systems
- Lack of economic resources to implement the BEMS
- Lack of clear objectives after the implementation of the BEMS.
- Failure to achieve the organisational change required for the implementation of an energy management system (habits, recipes, attitudes, redefinitions of positions, to learn and unlearn, etc.)
- Communication problems between the energy manager and the decision-making level