



Sea ports

Case study

Port of Barcelona

PROJECT

Improved consumption management in the port of Barcelona

SECTOR

Marinas

CLIENT

Port of Barcelona

Information of interest

Management and allocation of individual costs by tower

Most significant results

INVESTMENT

€80000

SAVINGS

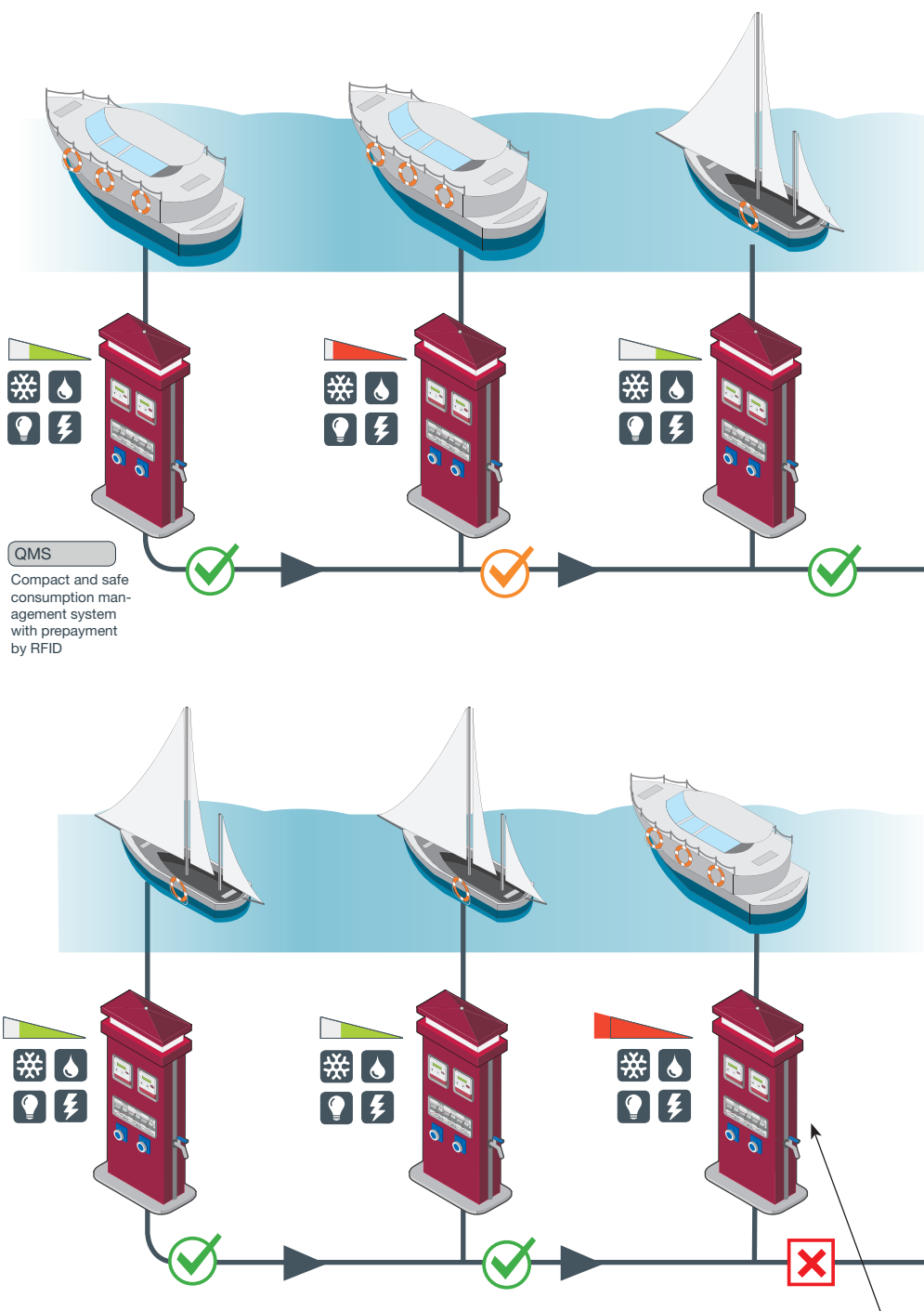
25-30% of consumption

PAYBACK PERIOD

3 years



“It was necessary to find solutions that would reduce electrical costs and decrease overall consumption, without affecting the customer satisfaction rate”



Initial situation

The Port of Barcelona experienced a 60% increase in the electricity bill due to continual increases in the cost of energy. At the same time, users of the moorings wanted to enjoy the same commodities they have in their usual dwellings, and so were using all types of household appliances, air conditioning and heating devices, without being aware of the extra costs they were incurring.

This situation caused the overloading of existing lines and difficulties for managing a network with numerous consumption points. Therefore, it was necessary to find a solution that would reduce electrical costs and decrease overall consumption without affecting the customer satisfaction rate.

Objectives

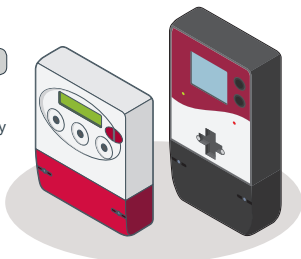
The main objectives were to achieve maximum energy efficiency and maintain the level of comfort for customers. This objective was subdivided as follows:

- Improve control of consumption in the moorings: by using a remote energy meter management system.
- Manage consumption: Correctly allocate the consumption to each mooring so that customers can avoid unnecessary cost overruns.
- Avoid problems in the installation: arising from excessive use of the port's electrical network.



Savings
25-30%
monthly average

CIRWATT B
Multifunction
three-phase
electrical energy
meter



PLC 800
Communications
concentrator

Software
PowerStudio
Installation control
software

› The system made it possible to correctly allocate electric energy consumption to each mooring so that customers could avoid unnecessary cost overruns, and also to connect/cut off services to the moorings in an instant.

Results

Using statistical data of similar topologies, it was estimated that implementing the system would obtain savings the first year of 25-30% over the previous year. In addition to the drastic decrease in energy costs, overload problems in lines and consumption peaks were minimised.

The change also increased customer loyalty, because port management allocated the exact costs of each mooring in the invoices without mistakes or estimated usage. ▀

More information about the solution

The solution entailed installing towers with PLC electric energy meters and water meters with impulse outputs. These towers make it possible to isolate units in the environment and supply users with electricity and water on a single reading system for both energies.

Using the computer management system made it possible to have complete control of the customer's access and connect/cut off the services to the moorings in an instant. It also made it possible to obtain consumption data from the energy meters, show the exact energy consumption of each customer during his stay, generate invoices with the exact amount of the customer's consumption, as well as enable detection of faults in the network.

Specifically, the solution enabled:

- Improving control of consumption in the moorings: The sea port management could connect and cut off the electric and water supplies of the mooring places remotely with telemanagement of the energy meters.
- Managing consumption: with the system installed, port management could see the consumption and limit the maximum consumption of each mooring place in order to raise customer awareness and promote a more rational use of energy.
- The system made the situation fairer for the user, because the consumption readings meant he paid exactly for what he consumed. This fact also enabled better management of total port consumption, resulting in big savings in the electricity bill.
- Avoiding line overloads: By remotely limiting maximum consumption per mooring place, management was able to avoid overloads on the electric lines. The system made it possible to remotely reprogram the maximum allowable consumption per mooring. This gave the user greater load awareness when connecting.
- Avoiding investment in infrastructures: The system provided reading and control through the existing electric wiring, rendering it unnecessary to open communication channels for the control system. This fact produced big savings in infrastructures.
- Unifying the energy measurement system: The system gathered electric and water consumption data in the same format, which helped port management group different energy readings (electricity and water) in the same format.

Customer response to these changes was also positive. They understood the necessity of saving energy and appreciated the port management's respect for the environment. On account of this, users were made aware of using efficient units and avoiding unnecessary consumption - a change of attitude that was subsequently detected in the electricity bills.

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CIRCUTOR - Vial Sant Jordi, s/n
08232 Viladecavalls (Barcelona) Spain
Tel. (+34) **93 745 29 00** - Fax: (+34) **93 745 29 14**
central@circutor.com