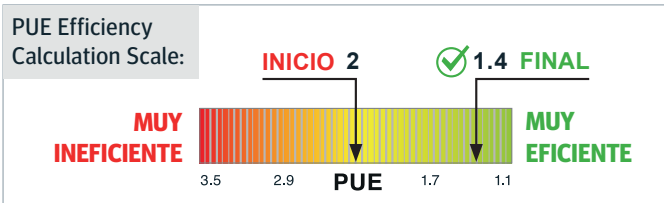




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PUE: Power Usage Effectiveness, calculated with the formula

$$\text{PUE} = \frac{\text{Total energy supplied}}{\text{Energy for computer equipment}}$$

Moreover, the Environmental Protection Agency of the United States (EPA) provides the following PUE values as a reference:

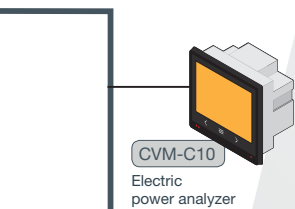
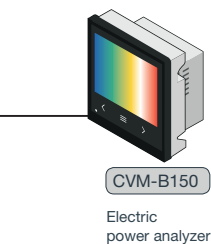
- Historic 2.0
- Current trend 1.9
- Optimised operations 1.7
- Best practices 1.3
- State-of-the-art 1.2

More information about the solution

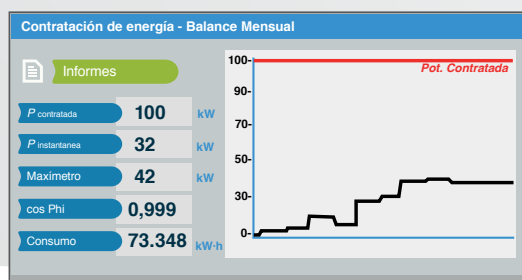
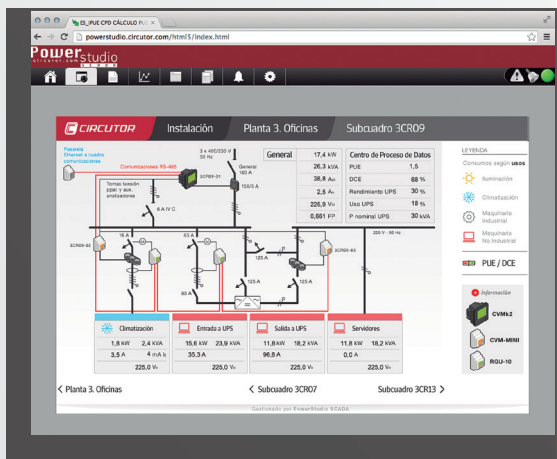
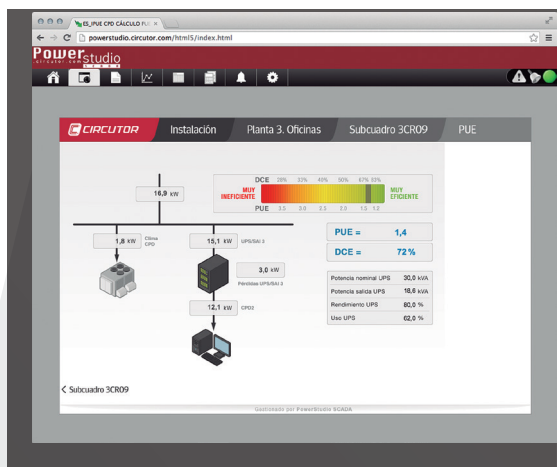
The application features:

- A first screen in single-line diagram format with real consumption and system status by line.
- A second summary screen with performance calculations, enabling you to create and display reports with results for different periods (daily, weekly, monthly and yearly)
- In addition, the system lets you define the maximum server group size and switches off unused capacity, always maintaining service levels.

By monitoring the actual power consumed, it was possible to reduce the amount of power contracted in some centres, achieving an annual reduction of €2000 in the electricity bill



- Room Air Conditioning
- Lighting
- Unit refrigeration
- Auxiliary power points
- Various services
- Etc.



- Software PowerStudio

Solution

Of the total energy consumed in the DPC, 60% corresponds to the electrical consumption of the infrastructure and the remaining 40% to refrigeration. Therefore, one of the keys to the success of the energy improvement project was measuring the consumption of each unit type in order to be able to recognise the most affordable areas of improvement.

Three steps were taken for such purposes:

- Measurement using **CVM** power analyzer units with their corresponding current transformers and RS485 serial communications to find out how much energy is circulating.

- Analysis using the **PowerStudio SCADA** application, calculating the **PUE**, viewing and preparing the corresponding reports.
- Improvements in three areas in accordance with the data collected: Reduction in contracted power, as it was found that the actual maximum power never exceeded the contracted power. Changes to room management by correctly controlling and adjusting room temperature. Lighting optimisation. ▶

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