



Intelligent energy management platform

Potential energy savings based on Artificial Intelligence



CONFIDENTIAL

What is Smarkia?

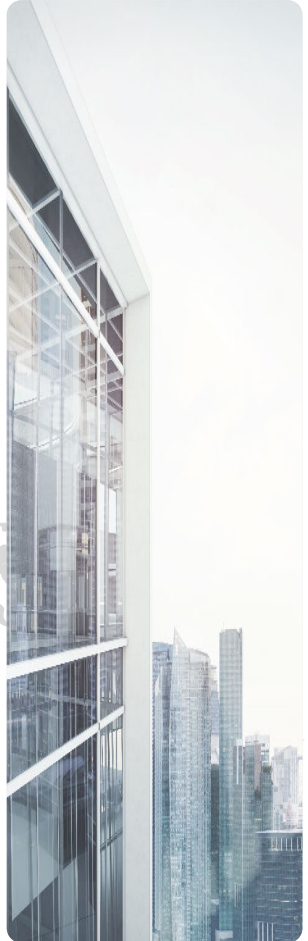
2011: Company Foundation. *Made in León.*

With worldwide presence and focus markets:

- Europe
- LATAM
- USA

+30 Partners +300 Clients

July 2022: Repsol y MN8 invested in our software platform.



Our platform



Artificial Intelligence-based Energy Management Platform



Tool for



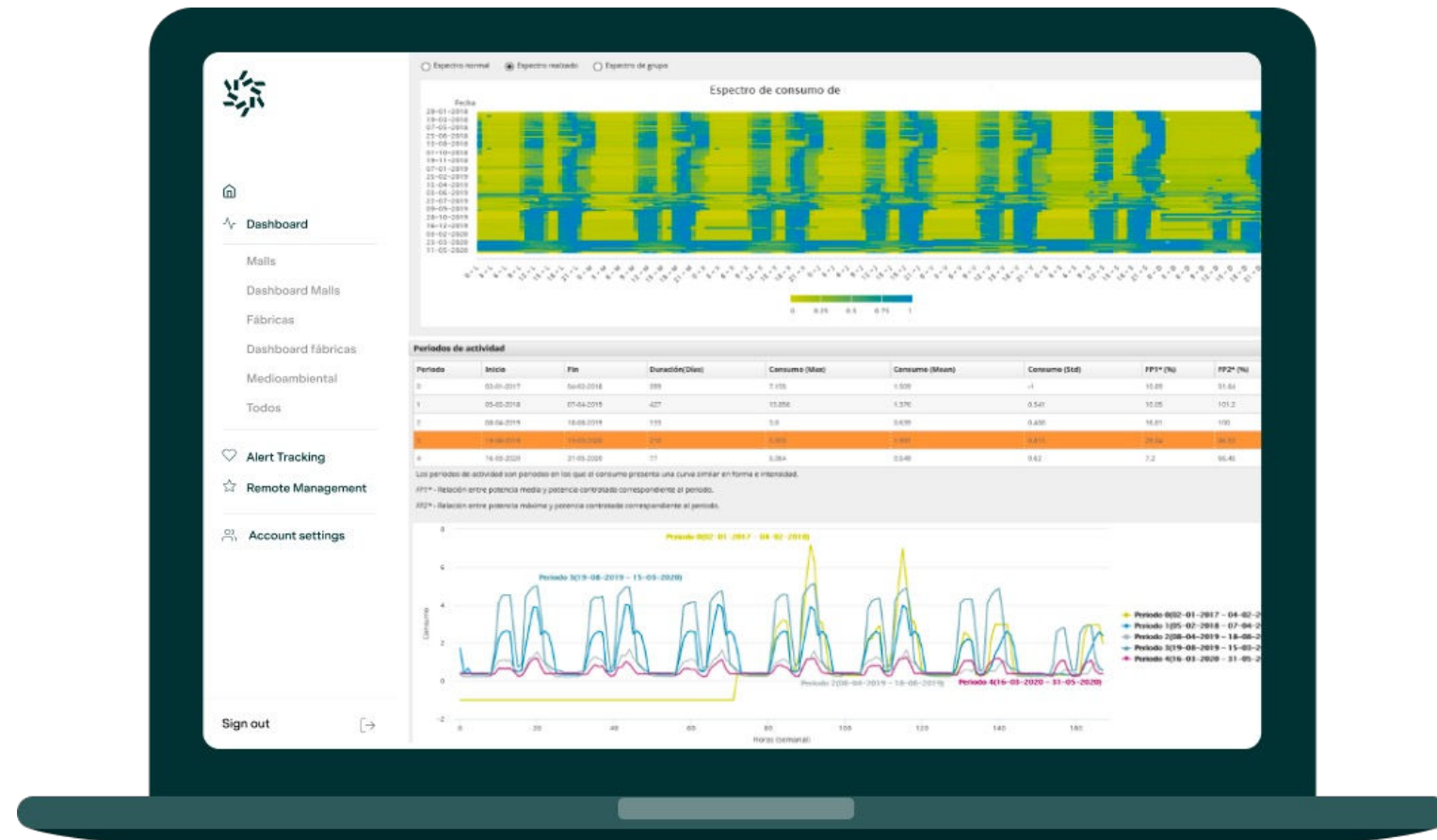
Sustainable energy transition

Our Key:

a disruptive way

of applying AI

“ We achieve what others believe impossible by using AI to transform information into knowledge.



What do these images have in common?



Any anomaly?



Our Key:

a disruptive way

of applying AI



Improved time series processing speed

- Smaller data sets are needed.
- Reduced training time.
- Faster results.



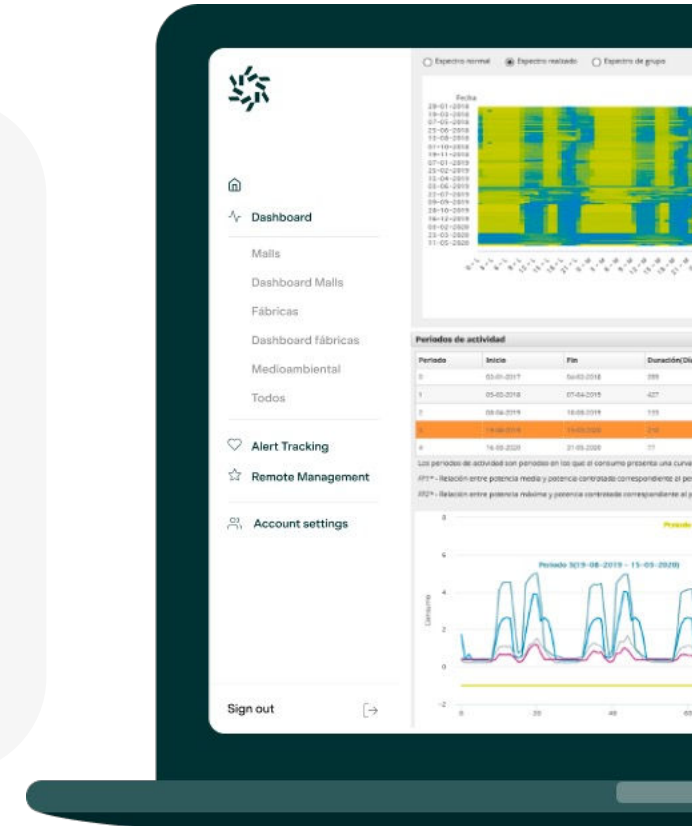
Improved accuracy

- Better data quality.
- Better understanding of the variables involved in energy consumption.
- Better predictions.



Improve data quality

- Improved data quality.
- Improved data reliability.



Smarkia worldwide



Spain

Industry



Services



What is the market looking for?


- 1 Energy cost savings.
- 2 Immediate start-up.
- 3 Rapid return on investment.



What have we achieved by applying AI?

We have succeeded in meeting our customers' objectives.



 Up to 20% savings on energy costs*.



 Immediate setup + ongoing support



 Return on investment in one year*.

*Máximos en cliente real

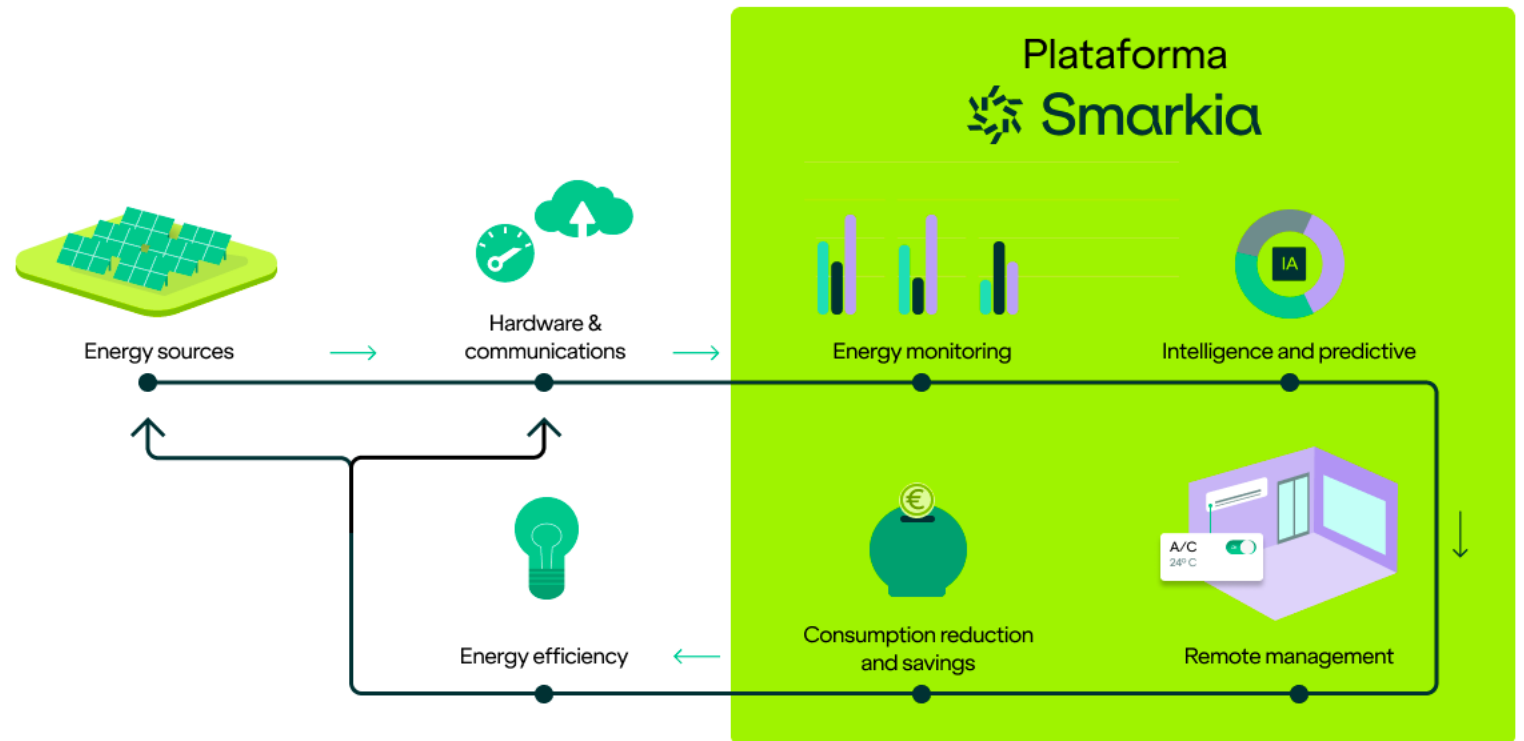
How does Smarkia work?

Smarkia differentiates itself by offering a comprehensive AI-based energy management solution. Our platform is easy, intuitive and customizable. But it is also the solution that automates many of the processes that are still complex in many businesses.

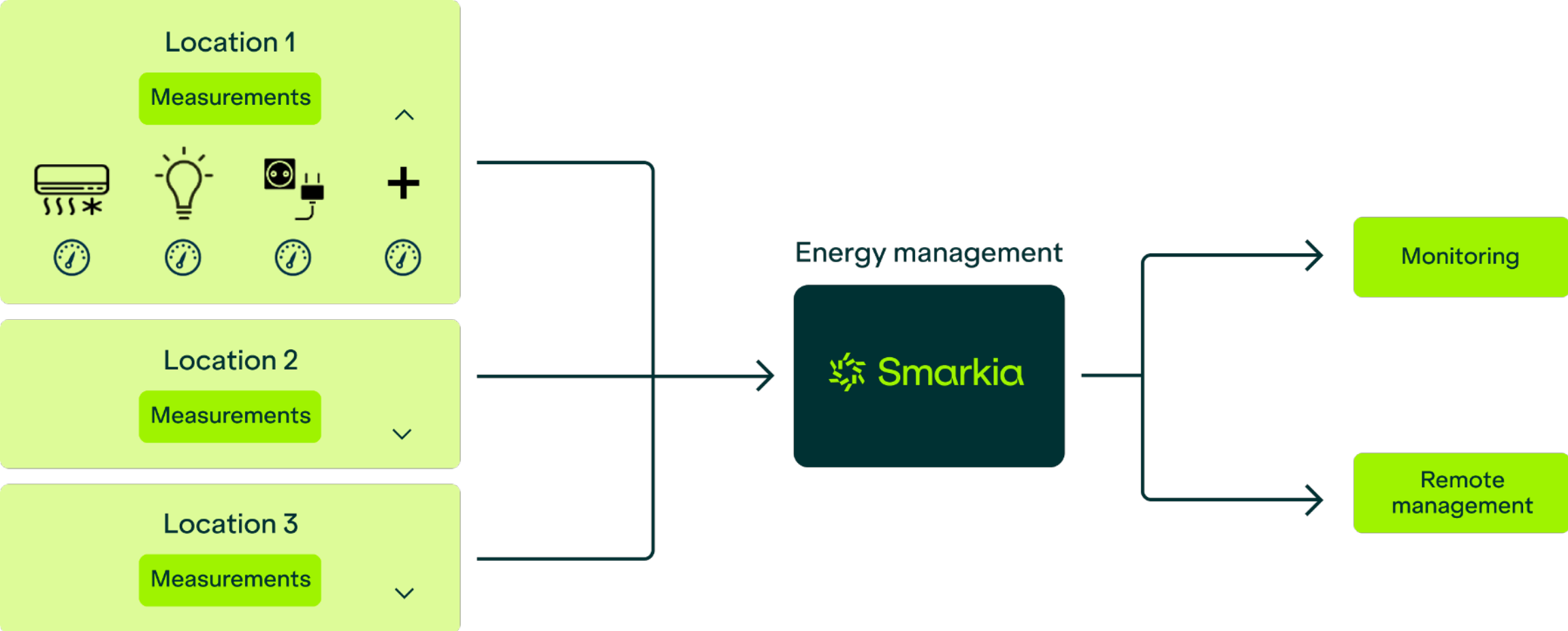
In the image we visualize the process of the platform in a simple way:

- **Monitoring:** function that allows collecting the necessary information to act on an installation.
- **Intelligence and predictive:** treatment and improvement of the quality of the data that allows making predictions and establishing patterns.
- **Remote management:** necessary to control and act autonomously in isolated or geographically distributed technical installations.

In this way, companies that count on Smarkia achieve a reduction in consumption, savings and impact, guaranteeing energy efficiency in their installations.



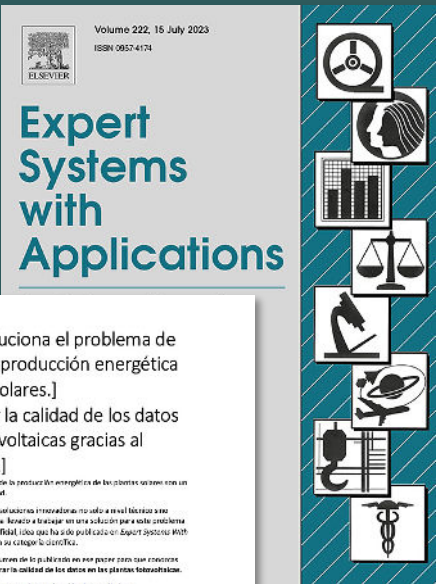
How? Very simple:



Proven excellence

At Smarkia, innovation and excellence are part of our DNA. The best proof of our performance is that top international journals such as 'Expert Systems With Applications', a reference in its scientific category, publish our scientific research applied to the energy sector.

This achievement is a testament to our team's commitment to improve data quality and offer innovative solutions at both technical and scientific levels.



Volume 222, 15 July 2023
ISSN 0957-4174

Expert Systems with Applications

[Cómo la IA soluciona el problema de medición de la producción energética de las plantas solares.]
[Cómo mejorar la calidad de los datos en plantas fotovoltaicas gracias al Deep-Learning.]

Los avances en la lectura y medición de la producción energética de las plantas solares son un problema importante en la actualidad.

En similar trabajos para ofrecer soluciones innovadoras no solo a nivel técnico sino también a nivel comercial. Solo así se puede trabajar en una solución para este problema basándose en el uso de inteligencia artificial. Como que ha sido publicado en Expert Systems With Applications, revista de referencia en su categoría científica.

En esta artículo se obtienen un resumen de la publicación en español para que conozcan cómo el Deep-Learning puede mejorar la calidad de los datos en las plantas fotovoltaicas.

El problema de la pérdida de datos en la producción fotovoltaica.
La generación solar fotovoltaica está creciendo en España de forma importante. Según datos de REE (Red Eléctrica de España), a diciembre de 2022 el parque nacional de generación fotovoltaica supera los 15000 megavatios de potencia. Solo en el último año ha crecido un 7,9%.

Este aumento de la producción fotovoltaica trae consigo numerosas beneficios para toda la sociedad, pero también presenta sus propios retos tecnológicos. Uno de ellos es la falta de calidad para a medida de forma precisa la producción de energía y su relación con otros factores.

Este problema tiene un impacto mayor del que se suele esperar ya que afecta tanto a la operación y mantenimiento de las instalaciones como a los predictores que son necesarios para integrar convenientemente la energía solar en la red eléctrica nacional.

Problemas operativos y de mantenimiento provocados por la ausencia de datos.
Tiene datos faltantes y precisos es clave para realizar análisis sobre la producción y mantener los predictores actualizados que respondan en un mayor ritmo y eficiencia de la generación.

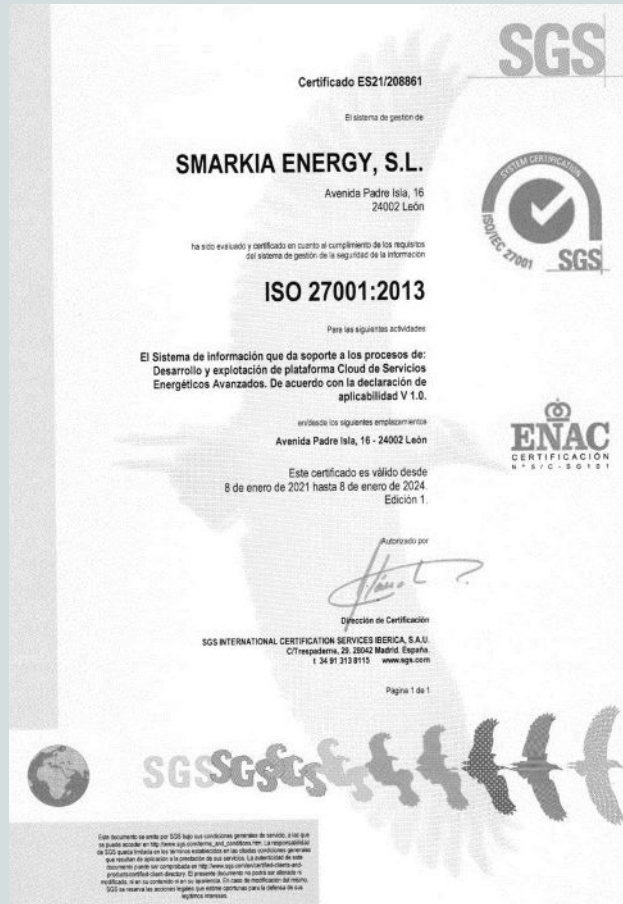
La falta de datos resuelve un problema ya que estos son necesarios para operar y predecir la generación eléctrica de la planta a lo largo del tiempo, así como para mejorar el rendimiento y la vida útil de las instalaciones.

Cybersecurity

The security of our clients and collaborators' data is an indisputable priority at Smarkia. For this reason, we always keep up to date with the highest cybersecurity standards, being ISO 27001 certified and SOC2 type2 compliance standard.

Our dedication to information protection reflects our firm determination to provide a reliable and secure environment.

*SOC 2 is a voluntary compliance standard that indicates that an organization maintains a strict level of information security. Originally developed by the American Institute of CPAs (AICPA), it specifies how an organization should manage confidential client data. While recognized primarily in the U.S., the standard is respected worldwide.



Success stories

CBRE

Alcobendas office building

20% energy savings in air conditioning.

Payback of less than one year.



consum

Corporate validation

500 Stores

Savings: Expansion to all workplaces



PARADORES

100 hotels nationwide

Multi-energy monitoring (electricity, natural gas, propane) + water.

3,800 measurement points, including variables such as occupied rooms.



Success stories **CBRE**

Description

Optimization of the consumption of 4 air conditioning units in 2 buildings.



Operation

Dynamic On/Off based on the temperature of 4 air conditioners.

Two flexibility modes indicated by the customer.

Consumption

Total:
1-1.7 GWh /building/yr.

Air conditioning:
0.05-0.08 GWh/building/yr.

Results

Savings of up to 13% on the cost of energy managed during 2021 and estimated up to 28% with improvements.

Operation's conditions

Savings(%)

Operation in medium-low flexibility

6,5%

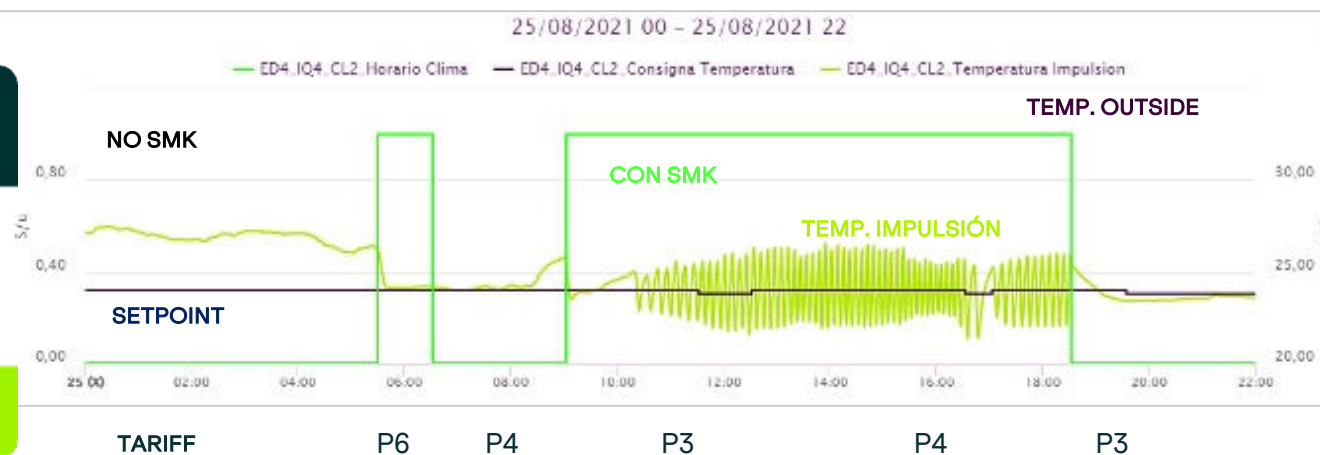
Operation in high flexibility (normal)

13,0%

Operation in high flexibility with distribution*

28,0%

* Pumps + air conditioners



Success stories

Description

Retail; sector
500 stores.

Conectivity

Centralization of all information.
Multiprotocol and different sources of information.
Personalized dashboards.

Operation

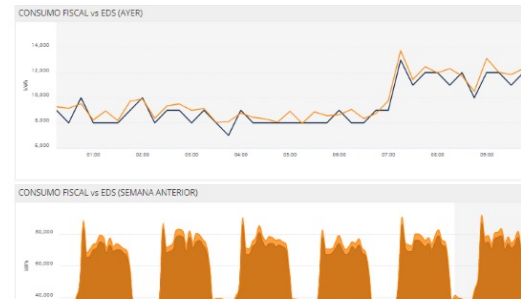
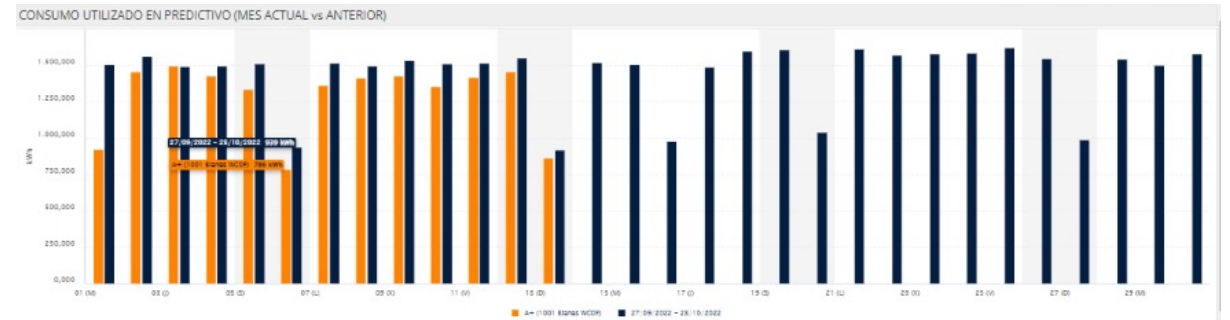
Stores' KPIs. Comparisons.
Detection of anomalies and alarms.
Photovoltaic monitoring.
Automation of audits of its 500 stores every 4 years.

Consumption

Consumption and cost per store forecasting.
Baselines.
MAES suggestions.

Results

Expansion of savings to all centers.
Optimization of all energy contracts.



Success stories PARADORES

Description

- 100 hotels nationwide.
- Multi-energy monitoring.
- 3,800 measurement points, including variables such as occupied rooms.

Conectivity

Submetering. Display of additional and independent information that provides detailed data on the uses of the different energy vectors.

Operation



- Monitoring and control of different equipment.
- Dynamic control rules with Artificial Intelligence.

Consumption

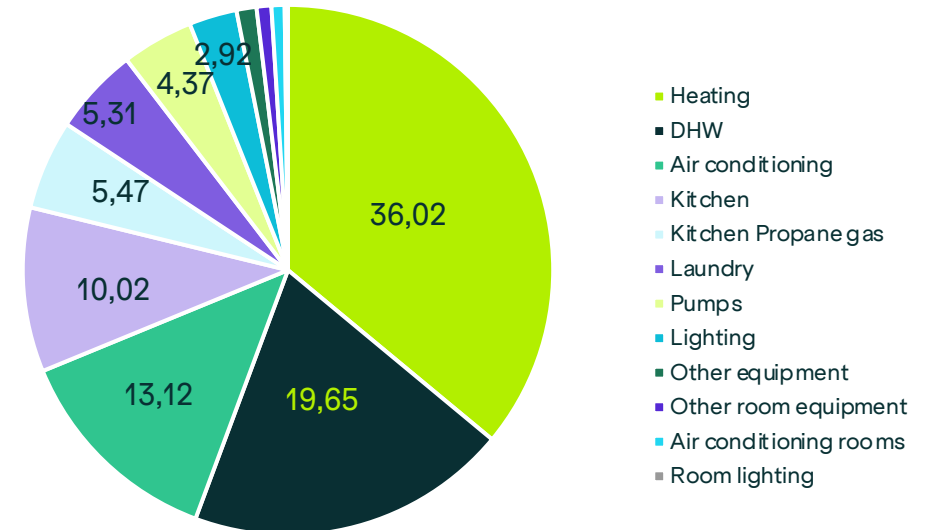
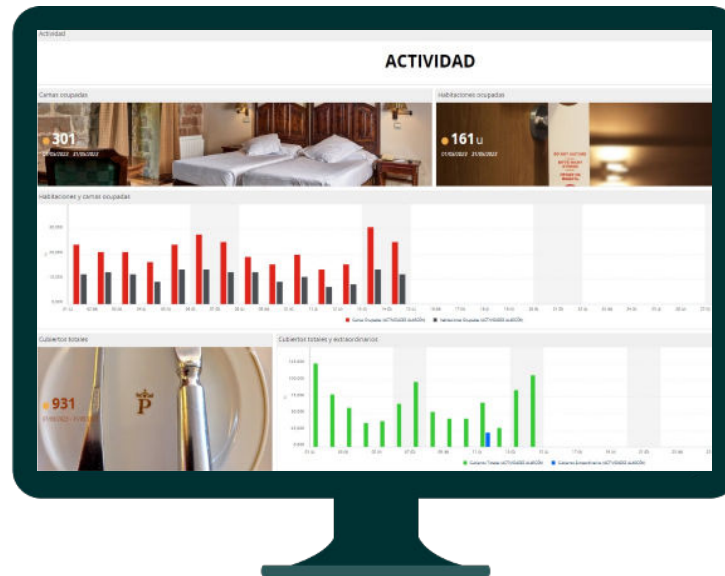
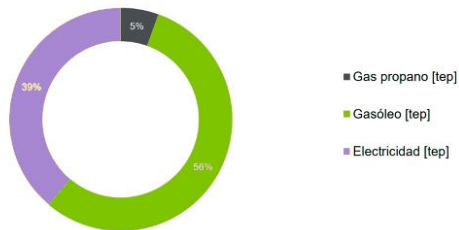
- KPIs of m2, occupied rooms, total covered.
- Control of yields and consumption of each equipment.

Results

- Intelligent multiside tele-management.
- Comparison of rules between premises.
- Savings in all energy vectors.
- Continuous improvement.

Fuente de energía	Consumo periodo de referencia	Factor de conv. (x10 ⁻³)	Consumo periodo de referencia (tep/año)
 Gas propano [kWh]	77.345	0,086	6,65
 Gasóleo [kWh]	787.772	0,086	67,75
 Electricidad [kWh]	550.037	0,086	47,30

En la siguiente gráfica podemos observar el reparto de consumos por cada fuente de energía durante el periodo de referencia del Estudio:





Andrés Tanaka

Business Development Manager



andres.tanaka@smarkia.com



NONCONFORMIST ENERGY



www.smarkia.com

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