



## A SUCCESS STORY



Empowering customers to save energy by informative billing

### **Project & Solution**



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

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Report developed by CIMNE - BEE Group on behalf of the project EMPOWERING with support from the Intelligent Energy Europe programme of the European Union.

# The Empowering solution

The Empowering project has encouraged utility customers to save energy and money by receiving useful information such as informative energy bills and/or specially designed online tools.

A wide range of user feedback services have been developed by a collaborative consortium formed by 4 energy utility companies, 2 research centres, social agents and an advisory board with 6 representatives of the energy sector. The services have been offered to a population of more

than 340,000 consumers and their effectiveness has been evaluated for a period of one year, in terms of energy savings, user acceptance and increased satisfaction.

By sharing knowledge and providing practical guidelines and tools for a wider adoption, the project is on track to achieve durable impact among the European utilities involved and for their customers.

[www.iee-empowering.eu](http://www.iee-empowering.eu)



**Dr. Stoyan Danov**

CIMNE BEE Group  
Empowering Project  
coordinator

*"Successful energy efficiency solutions for households will be easily scalable and economically viable."*

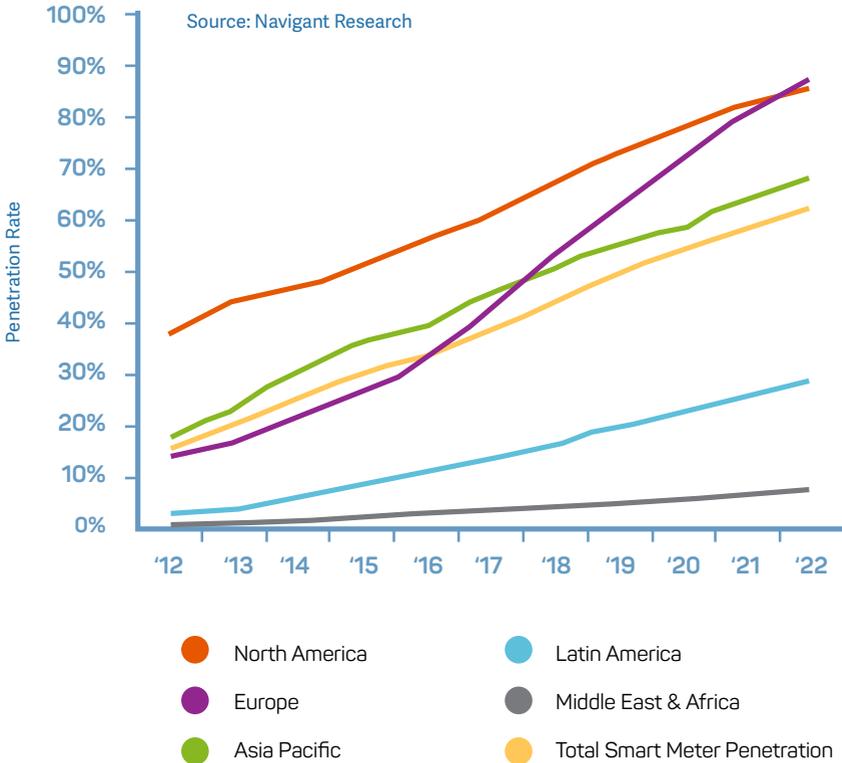
*"Our motivation behind setting-up Empowering was to develop low cost energy services based on utility meter data, so every household could easily be reached."*

# Seizing the opportunity

EMPOWERING's success story is the result of the convergence of a favourable market, appropriate technological capabilities and a highly competent team:

- Liberalisation of the energy market has created the competitive conditions necessary, by pushing the energy suppliers to offer more value-added services to their clients.
- The massive roll-out of smart meters has increased enormously the possibility of services to help consumers optimise their energy use, save money, and reduce their environmental impact.
- The 2012 Energy Efficiency Directive (EED) was also a key driver that contributed to launching these services through the energy savings commitments affecting energy utility companies (annual energy savings of 1.5%).

### Smart Meter penetration rate by region, World markets: 2012 – 2022



*“Empowering provides an analytics and data visualisation platform that enables utility companies, in particular medium-sized companies, to leverage useful energy performance information towards their customers and to support the development of new services.”*

# Objectives

## Improvement of energy billing

Rethinking the information on the energy bills by including comparisons with similar users and personalised energy saving tips.

## Interactive online tools

Making useful web-based applications easily accessible to proactive customers (e.g. enabling individual monitoring and targeting a greater number of motivated customers).

## Energy alerts services

Taking advantage of the smart meter capabilities to provide personalised near real-time information such as over consumption alerts, extreme temperature alerts, etc. via e-mail, SMS smart phone applications, etc.

## Integration of the utility customer services

Gathering personal preferences of customers (through call centers, surveys etc..) and matching them with the energy performance data to provide better customer profiles and improving the communication provided through customer services.

## Insight engine

Aiming to provide precise information required to inspire and motivate the customer at the appropriate time and with the right frequency.



# Empowering pilots and users

The Empowering partnership consists of 12 partners from six European countries (Denmark, Belgium, Spain, France, Italy, and Austria), who have joined forces to take up this challenge.

6 Countries

12 Partners

4 Pilot sites

344,000 Users

*"The effect of the Empowering user feedback services significantly enhances the development of sustainable energy by consolidating a more committed and concerned society towards the environment."*



**Christina**

Empowered user in Spain

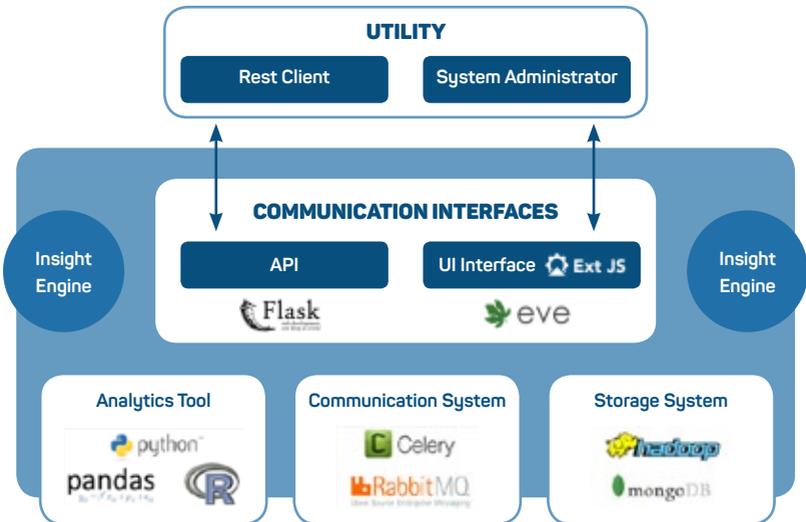
*"When I read the tips, for instance, I realised that there's no need to keep wasting electricity all the time... Before, I used to go outside and leave the lights on. Now I do my best to turn them off. It's not a big deal for me and there are savings, these are small things that at the end of the day make a difference."*

# The solution: Big Data in practice

The system architecture is designed to provide both awareness services to end users and internal analytical services for energy companies.

The system allows a bidirectional exchange of a large variety of data, ranging from energy consumption figures to all kinds of customers' related information.

- Mature technologies available under Open Source license: EUPL v.1.3.
- Ability to work with a large number and variety of data (Big Data)
- Connectivity to any software architecture using a standard API: REST API
- Modularity with a scalable Distributed Storage Technology: Hadoop and Mongo DB
- Proven analytical technologies: R and Python
- High level of security with authentication on different levels
- Infrastructure for permanent monitoring system performance
- Graphical User Interface (GUI) for setting services by the utility companies



# Beyond the Empowering project

The CIMNE BEE Group, as the main technological developer of the Empowering system architecture, will continue to provide services to interested European energy utility companies.

BEE Group will act as an active and collaborative partner, advising the utility companies on how they should engage and motivate their customers, and on how they can take advantage of the huge amount of data they are gathering from their energy meters.

During the project execution, 3 Spanish utility companies and 1 utility company from Uruguay have launched the informative services and are getting access to the knowledge acquired within the Empowering project.

BEE group has recently published the system architecture in GitHub and provides support for its implementation.

*CIMNE BEE Group will continue to offer the services to interested utility companies through its BEE Data set of solutions.*



**Eduard Quintana**

*Som Energia  
Energy cooperative*

*"After analysing different possibilities to offer personalised energy services to our customers, the Empowering solution was selected as the most suitable one."*





# empowering

energy counts

[www.iee-empowering.eu](http://www.iee-empowering.eu)

## Coordination and technological development



## Utilities

LINZ AG



## Technological partners



## Social agents



Co-funded by the Intelligent Energy Europe Programme of the European Union

**CONTACT:** Stoyan Danov – Project Coordinator – CIMNE BEE Group  
Edifici GAIA (TR14), C/ Rambla Sant Nebridi 22, 08222 Terrassa (Barcelona), Spain  
Tel. +34 93 739 89 87 (direct) | Tel. +34 93 739 85 75  
[sdanov@cimne.upc.edu](mailto:sdanov@cimne.upc.edu)