Partner search for the call HORIZON-CL5-2026-02-D4-02 Smarter buildings as part of the energy system for increased efficiency and flexibility

Summary

Profile type	Company's country	POD reference
Research & Development Request	**France**	**RDRFR20251002014**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	• **Italy** • **Spain** • **Belgium** • **Germany** • **United Kingdom**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**2 Oct 2025** **2 Oct 2026**	**2 Oct 2025**

General Information

Short summary

Eiffage Énergie Systèmes (EES) pioneers innovative Energy Management Systems (EMS), driving efficiency in smart buildings and cities. We develop cutting-edge EMS solutions to optimize energy consumption and minimize carbon footprints. Our in-house expertise covers intelligent building automation, smart grids, and seamless renewable energy integration, enabling sustainable urban environments.

Full description

We design and deploy smart infrastructure, incorporating IoT and advanced analytics for real-time energy monitoring and control. This comprehensive approach ensures significant energy savings and enhances overall urban quality of life. EES develops its own EMS, named Energie Suite, which is widely utilized to monitor and optimize energy consumption across Eiffage's real estate portfolio, as well as for our clients, such as the new Nantes University Hospital.

We propose that the EnergieSuite EMS serves as the core foundation for developing advanced and interoperable framework for optimizing energy consumption, production, and storage within smart buildings to be used on the three

experimental sites.
An increasing number of buildings are equipped with photovoltaic panels, solar canopies, or other renewable energy sources. Alongside these production facilities, new consumption points such as electric vehicle charging stations are being added. Concurrently, the electricity supply market is becoming more dynamic to account for peaks and troughs in consumption, reflected in flexible pricing for energy production and consumption on the electrical grid. This necessitates the implementation of stationary battery storage systems.
The proposed project aims to develop a generic framework for intelligently managing smart buildings to optimize their energy consumption and production while contributing to the stability of the electrical distribution network. This involves developing a system capable of:

- Maximizing the self-consumption of renewable energy sources.
- Limiting the power connection to the electrical grid.
- Exploiting flexible tariff structures.
- Reducing or eliminating the building's electrical consumption during peak demand.
- Providing a backup mode to maintain the building's electrical supply during grid outages.

All these functions should operate automatically, optimally, and with minimal impact on users.
Successfully executing this project requires interfacing the Building Management System (BMS) with an advanced Energy Management System (EMS) capable of providing control commands for various electrical installations. This involves defining standard interfaces to connect existing BMS with the Building Energy Management System (BEMS).
Intelligent energy management will rely on algorithms for predicting energy production, consumption, and thermal inertia modeling, necessitating the standardization of prediction model interfaces to integrate them into heterogeneous BEMS.
Integrating electric vehicle charging stations into BEMS requires standardizing interfaces with Electric Vehicle Charging Management Systems (IRVE). To leverage Vehicle-to-Grid (V2G) functionalities, full support for the ISO-15118 standard will be essential.
Cybersecurity aspects of the solution and its interfaces will be addressed, particularly in compliance with NIS2 regulations.
Additional considerations for the project may include thermal energy storage and designing buildings with future uses in mind to facilitate modularity and reconfiguration in case of changes in purpose. This will be explored using Building Information Modeling (BIM).
EES is a proud member of the Smart Building Alliance, and we will leverage this membership to widely disseminate the results of our projects. Additionally, we will utilize this platform to gather independent feedback throughout the project phase, ensuring that our initiatives benefit from diverse insights and expertise.

Advantages and innovations

Our proposed project offers several key advantages and innovations that address the specific challenges outlined in the call. The solution significantly enhances energy efficiency by maximizing the self-consumption of renewable energy, reducing reliance on the grid, and optimizes energy usage pattern, contributes to grid stability through managing building energy demand and generation, the solution contributes to grid stability by reducing peak loads and providing backup power during outages and ensures user comfort by minimize the impact on building occupants, ensuring a comfortable and productive environment. Built upon EES's EnergieSuite EMS, the solution also incorporates several innovative features, including Predictive Algorithms, AI-Powered Optimization, V2G integration and to propose new standardized APIs for predictive algorithms integration

Technical specification or expertise sought

Building Science and Engineering
Social Sciences and Humanities
Building thermal modeling
Building Information Modeling
Electric Vehicle Charging (EV Charging)
Power Systems Engineering,
Software Engineering
Data Analytics and Machine Learning
Cybersecurity
Building Automation and Control

Stage of development

Available for demonstration

Sustainable Development goals

• Goal 7: Affordable and Clean Energy

IPR Status

IPR Notes

Partner Sought

Expected role of the partner

1. Building Thermal Modeling Laboratory:
• Expertise: Advanced knowledge in building thermal dynamics, energy simulations, and HVAC system design.
• Role: Develop and validate thermal models for various building types, ensuring accurate energy consumption predictions and enhancing the overall energy management strategy.
2. Sensor and PLC Specialists:
• Expertise: Proficiency in the design, deployment, and integration of sensors and Programmable Logic

Controllers (PLCs) for building automation.
• Role: Implement and maintain a network of sensors and PLCs to collect real-time data on energy consumption, environmental conditions, and system performance, ensuring seamless integration with the EMS/BEMS.
3. Energy Performance Evaluation Methodology Specialists:
• Expertise: Knowledge of energy performance measurement and verification protocols, such as the International Performance Measurement and Verification Protocol (IPMVP) or simpler methodologies.
• Role: Develop and apply a robust methodology to evaluate energy savings and performance improvements, ensuring accurate and verifiable results that comply with industry standards.
4. Flexibility and Interoperability Experts:
• Expertise: Deep understanding of current flexibility and interoperability standards in building energy management systems, as well as experience in improving these aspects.
• Role: Enhance the flexibility and interoperability of the proposed solution by developing advanced APIs and communication protocols, ensuring seamless integration with diverse building systems and technologies.
5. Cybersecurity Specialists:
• Expertise: Knowledge of cybersecurity best practices, standards (e.g., NIS2), and experience in securing energy management systems.
• Role: Ensure the cybersecurity of the solution, including secure communication, authentication, authorization, and data protection, to safeguard against potential threats.
6. Social Sciences and Humanities (SSH) Experts:
• Expertise: Understanding of user behavior, social acceptance of new technologies, and stakeholder engagement.
• Role: Conduct surveys, interviews, and focus groups to gather user feedback, ensuring that the solution addresses the needs and concerns of diverse social groups.
7. Electric Vehicle (EV) Charging and V2G Integration Specialists:
• Expertise: Knowledge of EV charging standards (e.g., OCPP, OCPI, ISO 15118) and Vehicle-to-Grid (V2G) technologies.
• Role: Integrate EV charging stations with the EMS/BEMS and implement V2G functionalities to enable bidirectional energy flow between buildings and electric vehicles.
8. Power Systems Engineering Specialists:
• Expertise: Deep understanding of power system dynamics, grid stability, and distributed generation.
• Role: Model and simulate the impact of the proposed solution on grid stability, ensuring that the energy management strategies complement grid operations and enhance overall grid flexibility

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **SME 11-49**
- **R&D Institution**

Call Details

Framework program

Access to finance

Call title and identifier

HORIZON-CL5-2026-02-D4-02Smarter buildings as part of the energy system for increased efficiency and

flexibility – Societal Readiness Pilot

Submission and evaluation scheme

Anticipated project budget

Coordinator required

Yes

Deadline for EoI

18 Jan 2026

Deadline of the call

17 Feb 2026

Project duration in weeks

36

Web link to the call

Project title and acronym

Dissemination

Technology keywords

Market keywords

- **06007001 - Other energy production**
- **06003008 - Other alternative energy**
- **06010003 - Energy for Industry**
- **06009 - Energy Distribution**
- **06008 - Energy Storage**

Targeted countries

- **Italy**
- **Spain**
- **Belgium**
- **Germany**
- **United Kingdom**

Sector groups involved

- **Energy-Intensive Industries**