

CETP Project Cooperation

Provisional Title: Smart EV Charging Hub Integration

Description – For Project Development

The project proposes a smart solution for the dynamic management of electric vehicle charging infrastructure in industrial and commercial environments (*hotels, corporate campuses, industrial parks*). The system optimizes available power, charging schedules, and interaction with the grid and local renewables, avoiding demand peaks, reducing energy costs, and maximizing the use of clean energy.

The platform will also enable the integration of future features such as vehicle-to-grid (V2G) and user prioritization based on mobility needs. We are seeking industrial and technology partners interested in demonstrating this approach in real-world environments.

Problem and need:

The accelerated expansion of electric mobility creates new challenges in energy management. Companies, hotels, and industrial campuses deploying multiple charging stations face contracted power limitations, high consumption peaks, variable energy rates, and the need to integrate their own renewable energy sources. Non-optimized use leads to additional costs, low efficiency, and the risk of grid saturation.

Objectives

- Develop an intelligent EV charging hub management system capable of:
- Dynamically distributing available power among multiple vehicles.
- Optimizing charging based on hourly energy prices.
- Aligning charging with local renewable energy production (e.g., solar).
- Implementing user prioritization strategies (hotel checkout, fleet shifts, etc.).
- Explore the future integration of Vehicle-to-Grid (V2G) services.

Technical Approach: The project will combine:

- Energy demand and renewable availability prediction models.
- Scheduling and optimization algorithms (lightweight ML + heuristics) to allocate power in real time.
- Integration modules with charger APIs and energy platforms.
- Dashboards for operators and users, with cost, avoided emissions, and charge status indicators.

Expected Impact

- Up to 20-30% reduction in charging energy costs through time management.
- Reduction in contracted power peaks → fewer penalties.
- Greater integration of local renewables → contribution to sustainability goals.

- Increased customer/user satisfaction through priority management and charging transparency.

About the company

Deduce Data Solutions located in Santander- Cantabria, Spain, brings the Artificial Intelligence research and innovation to the private sector. Using customized algorithms and physics-informed machine learning techniques (Physics-Informed ML).

The company don't apply a standard product, do researches and proposes innovative solutions with its own, more efficient and scalable models.

In this project DDS's role will be **to contribute its expertise in data analytics, cloud-API integration, and optimization algorithms, developing the core of the smart management platform.**

We are looking for Partners

- EV charging operators or utilities.
- Hotels, business campuses, industrial parks with pilot-scale charging infrastructure.
- Charging hardware manufacturers and renewable energy providers.
- Research centers in electric mobility and energy systems.

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