



Enabling Platform for Commercial Services of Aggregate management of resources in the electricity

## SCENARIO

Create and test a technological platform to meet the needs of the **Aggregator** from both the **technological and economic** points of view. The system of production, transmission, distribution and consumption of electricity (Electric System) has for several years now been in a phase of profound transformation from a mainly hierarchical model to a distributed model. The objective is to **reduce response times**, increase flexibility, the possibility of locally managing the various problems and ultimately **reducing associated costs**.

## TARGETS

The **PASCAL** platform acts as an innovative tool to face in a new way a market that is opening up in the Italian context. PASCAL enters this market with the proposal of an innovative approach both in the business model (**DEMAND RESPONSE AS A SERVICE**) and in the technological instrumentation (**end-to-end closed cycle platform**) which capitalizes on the experiences of the countries that first opened the market for the participation of new subjects (eg USA, UK).

To achieve this, **PASCAL adopts innovative technologies** for data analysis, prediction of the behavior of the units involved, interaction with the dispatching services market that exploit the most recent developments in the "**big data**" world.

**-Integrated technical and economic approach:** the models developed within the project will take into account consumption and production data in relation to **users' economic data** (opening hours, type of contract, type of activity, etc.).

**-Adaptive approach:** the models developed will be able to adapt automatically to changes in the **user's technical and economic profile**.

**- Purely software approach:** an easy to update platform, in step with both Italian and international regulations (international market) and open to new services ("electricity exchange").

**-End-to-end closed-loop solution:** the entire service realization cycle is considered automatically. There is the **measuring part**, the measuring **device** (scalable and modular), for managing the interaction with the operator and with the market and the chain of implementation to perform BMS functions.

## SYNOPSIS

**DURATION** : 1 January 2018 - 30 June 2020  
**COSTS** : € 2,431,448.31  
**FINANCING** : € 1,600,813.57

## COORDINATOR



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## SCIENTIFIC COORDINATOR



Multi Body Consortium for the promotion and adoption of Computing technologies Advanced Catania University

[www.consortio-cometa.it](http://www.consortio-cometa.it)

## TECHNOLOGY

To manage this phenomenon by guaranteeing greater flexibility and improvement in the management of the electricity grid, "**Smart Grids**" have progressively established themselves, which make **use of IT** and **telecommunications technologies**.



[www.pascalproject.cloud](http://www.pascalproject.cloud)

## INNOVATIVE ASPECTS

The project develops innovative technologies and tools for a new figure in the electricity market - the aggregator - which fits fully into the **Smart Grid** paradigm.

This role requires new methods to strictly combine technical and economic aspects which are crucial to obtaining the expected benefits. The project will therefore study and develop an innovative approach that addresses these issues in a strictly combined way and is directly focused on the different **application scenarios** (e.g. Virtual Power Plant, Demand Response) in **different contexts** (Distributed generation, industrial users, buildings, etc.). .).

"**Micro-dispatching**" policies will be developed which will allow innovative methods in the contractual and operational management of users and producers included in the aggregate, overcoming the rigidity of current contractual and operational relationships.



## SMARTGRID

Enabling Platform for Commercial Services of Aggregate management of resources in the electricity system (**PASCAL**): the platform created is an innovative product for which there is no consolidated offer on the Italian market, and which can also play a role in foreign markets. Compared to similar platforms developed on the basis of technical solutions directly derived from the control systems currently used (for example "instantaneous reduction systems" - UPDC), the project is innovative in that it will **adopt IoT and Cloud technologies** designed for system management with intelligence distributed - from a **Smartgrid** perspective - rather than for simple automation.



## CONSORTIUM

algoWatt S.P.A. with the headquarters in Catania, on the island of Sicily, where you can carry out all the planned activities. In Italy there are several locations, including the one in Milan - ITALY.



COL GIOVANNI PAOLO S.P.A. it is structured on two different Research Units, one in Moncalieri (TO) and the second branch in Belpasso (CT) Piano Tavola where the project activities will be carried out - ITALY.



COMETA - Multi Entity Consortium for the promotion and adoption of Advanced Computing Technologies and will take place in the Catania - ITALY office.



SFERA S.r.l. is an innovative startup born with the aim of developing highly reliable services for the management of distributed, remote controlled and programmable network infrastructures. The activities will take place in its registered office in Tremestieri Etneo (CT) - ITALY.



The results of the project are published on the website [www.pascalproject.cloud](http://www.pascalproject.cloud)

