



## Company Profile

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**Legal Name:** Sistemes avançats d'energia solar tèrmica, SCCL

**Registered Trademark:** AIGUASOL

**Headquarters:** Barcelona

**Company Description:**

Established in 1999, AIGUASOL ([www.aiguasol.coop/en](http://www.aiguasol.coop/en)) is an SME staffed with a team of over 20 professionals with a high level of technical and scientific experience. They include engineers, PhD holders, architects and physicists with considerable experience both in private companies and research centres. AIGUASOL is a locally based, globally active company. We have offices in Barcelona and the Basque Country, as well as a presence in Santiago de Chile, Lisbon and Bogotá. The head offices take on projects throughout Europe, Asia and Africa.

Our aim is to create indoor and outdoor spaces and to devise exceptional, comfortable and efficient systems and processes that exert the least possible impact on the environment. By applying best practices in the creation process, we believe we can improve human experience while reducing the resources used. On the strength of our extensive knowledge, experience, neutrality and rigor, we see sustainability as a key factor in getting people to give their all and feel comfortable in their surroundings.

AIGUASOL works from a variety of perspectives according to its clients' needs so as to offer appropriate solutions and optimum designs.

Consulting services. Proposing solutions and allowing for conclusive and quantifiable decision-making to achieve the desired objectives.

Engineering services. Developing detailed solutions from the early stages through to executive designs, implementation and subsequent monitoring.

R&D services. Designing and marketing new technologies, methodologies and processes rooted in energy efficiency and renewable energy sources.

Software services. Distributing, providing training in and maintaining simulation software and developing custom-made tools.



## AIGUASOL Solutions

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Over the past nineteen years, AIGUASOL has accumulated a wealth of experience in the fields of energy efficiency, renewable energy systems and environmental quality, both in commercial project implementation, energy planning, policy analysis and the appraisal of R&D&I projects, as key components of a common mission: to reduce greenhouse gas emissions in the framework of a circular economy, creating healthy and sustainable environments. The different solutions are client- and user-oriented, taking their specific requirements, needs and objectives into consideration.



### ***Energy in buildings.***

Studies and projects in both new and existing residential buildings and all manner of large consumer tertiary buildings.



### ***District networks and large-scale generation.***

Feasibility, design, implementation and monitoring of district heating and cooling (DHC) systems and other large-scale energy production systems.



### ***Energy policy.***

Development of energy plans, investment strategies and subsidies as well as local, regional and national regulations.



### ***Energy rehabilitation.***

Approaches, definition and dimensioning of energy rehabilitation activities in residential and tertiary buildings, whether a client's own investment or a third-party ESCO investment.



### ***Energy management systems.***

Design and implementation of smart energy management systems: optimised management, preventive maintenance, results-oriented rehabilitation and benchmarking.



### ***Net zero-energy buildings (NZEBS) and environmental certification.***

Concept, design, implementation and monitoring of net zero-energy buildings (NZEBS), private environmental certification and public energy certificates.



### ***Energy intensity in industry.***

Analysis and projects to reduce energy intensity and emissions in industrial processes and facilities.



### ***Other client-oriented solutions.***

Other client-oriented solutions that require the calculation and optimisation of energy consumption and energy costs.



### ***R&D&I solutions.***

Services for applied research in energy-related issues such as the development of specific elements, global solutions or product lines, the search for better building solutions and so on.



### ***Indoor Environmental Quality (IEQ).***

Development of strategies to create healthy and comfortable buildings by incorporating Indoor Environmental Quality requirements and standards in the building's design. Specific consulting service as well as CAI and WELL certifications.



### ***Outdoor Environmental Quality (OEQ)***

Development of strategies to improve Outdoor Environmental Quality with a view to promoting healthy and comfortable urban environments. Implementation of monitoring and communication projects on air quality (LIQUENS).

AIGUASOL works for real estate developers, property owners, building contractors, ESCO and investment fund companies, professionals (architects and engineering companies), professional associations, public agencies, industries and manufacturers, the primary sector, public services and research centres.



## Outdoor Environmental Quality

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Outdoor Environmental Quality encompasses the environmental conditions in urban settings that bear a direct impact on the health and well-being of urban centres' residents and visitors.

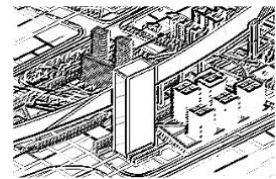
AIGUASOL offers a consulting service that is characterised by the integration of different parameters of environmental quality, underpinned by tools and knowledge in different domains and using an integrated working methodology. This approach facilitates the creation and design of innovative strategies and solutions adapted to each context.

The strategies allow thermal comfort (including microclimatic control), air quality and acoustic comfort to be measured, analysed and improved.

Some specific examples of the services we offer include:

### Thermal comfort

AIGUASOL has experience in mapping the human body's thermal response to their surroundings and in analysing heat island effects in the design phase of urban buildings. The studies include different scenarios (climate, including climate change forecasts, and possible solutions to be adopted, both in terms of urban planning and materials and vegetation).



### Air quality

As regards air quality, AIGUASOL offers a consulting service aimed at supporting local strategies to improve air quality, based on technical expertise and experience in monitoring systems, data analysis, the development of IoT platforms, as well as communication and public awareness projects.



LÍQUENS is an innovative project developed by AIGUASOL, which was the winner of the "Call for Solutions" competition at the 2015 edition of the Smart City Expo World Congress in Barcelona. LÍQUENS is an IoT platform that allows data from any kind of sensor to be read and viewed by citizens in a user-friendly manner, informing them and raising their awareness of the air quality, via the website or the screen of any device. The first LIQUENS campaigns (Viladecans and Sant Cugat del Vallès) were equipped with their own panels to transmit the information to urban areas.



## Ad-hoc solutions

- Identification of the main critical points that affect the user's thermal comfort in outdoor built environments and the design of improvement strategies.
- Study of the impact of vegetation in urban green spaces on thermal comfort and air pollution.
- Analysis and design of shading strategies to limit solar radiation in outdoor spaces.
- Design of systems for collecting and analysing air quality data.
- Evaluation of a specific activity or urban improvement in terms of its impact on air quality.
- Development of innovative air-quality strategies to limit the level of inmissions inhaled by citizens.
- Urban planning guidance, through the study of the factors determining citizens' comfort and health.
- Consulting service and development of tools to monitor and improve air and acoustic quality, in an integrated manner.

## Some Success Stories

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**Title:** NANOSEN-AQM. Development and field validations of a low-cost, low-energy consumption nanosensor system for real-time monitoring of ambient air quality

**Client:** European Commission

**Year:** 2018 - 2021

**Location:** Spain, France and Portugal



**Title:** LÍQUENS. Environmental panel. Monitoring, awareness and participation in air quality and noise levels

**Client:** Sant Cugat City Council, Viladecans City Council

**Year:** 2017.

**Location:** Sant Cugat, Viladecans



**Title:** Design of experimental educational workshops on air quality

**Client:** Government of Catalonia's Ministry for Territory and Sustainability

**Year:** 2018.

**Location:** Catalonia



**Title:** Assessment and development of energy directives and economic feasibility studies in the zero-energy urban development of Chamartín in Madrid, covering 312 hectares and 3.3 million built square metres

**Client:** DUCH

**Year:** 2009 - 2014

**Location:** Madrid





**Title:** Barcelona Energy Improvement Plan (PMEB) and the Energy, Climate Change and Air Quality Plan for Barcelona (PECQ)

**Client:** Barcelona Regional / Barcelona Energy Agency

**Year:** 2000 / 2010

**Location:** Barcelona



**Title:** GrowSmarter - European project for the development of solutions for the smart cities of the future

**Client:** Gas Natural

**Year:** 2015 - 2019

**Location:** Various sites in Europe