Engineering Division

We comprehensively execute all phases of projects

From advice, consulting, and feasibility analysis to construction management and supervision or the execution of technical development plans

Our main activities include conceptual and basic engineering, detailed engineering, technical management, consulting and technical advice, and project modeling and rendering.

Among our milestones, we have developed 28 reversible pumping station projects, totaling more than 4 GW, engineered 18 photovoltaic projects with a capacity of 1.1 GW, and more than 2,350 MW in terrestrial photovoltaic energy.

We have developed 400 MW in offshore wind energy projects and 200 Hm^3/year of capacity in seawater desalination plants in Andalusia.

With regard to detailed enginering, we have executed more than 40 renewable energy projects, totaling 450 MW of installed capacity.

We position ourselves as a benchmark in the development of sustainable infrastructure and renewable energies, contributing to the energy transition and efficiency in the use of natural resources.

Magtel

INNOVATION & TECHNOLOGY

BESS SYSTEMS

REVERSIBLE PUMPING

GREEN HYDROGEN

OFFSHORE WIND POWER

DESALINATION

BIOGAS

GROUND-MOUNTED PHOTOVOLTAICS

FLOATING PHOTOVOLTAICS

BESS Systems

A system capable of providing flexibility and stability to the electrical system, allowing energy to be stored and released when needed, and balancing supply and demand

It shifts renewable generation, which is inherently variable, to periods when its contribution is most needed.

These systems can offer ancillary services such as frequency regulation and voltage stabilization, which helps maintain optimal operation of the electrical grid.

They are rapid response systems thanks to their power electronics, which allows participation from the most urgent Primary Regulation mechanism to Tertiary Regulation, providing stability to the grid.

6
PROJECTS

300
MW
TOTAL
POWER

1.172
MWh TOTAL
STORAGE
CAPACITY

MÁLAGA, CÓRDOBA AND SEVILLE

Reversible pumping

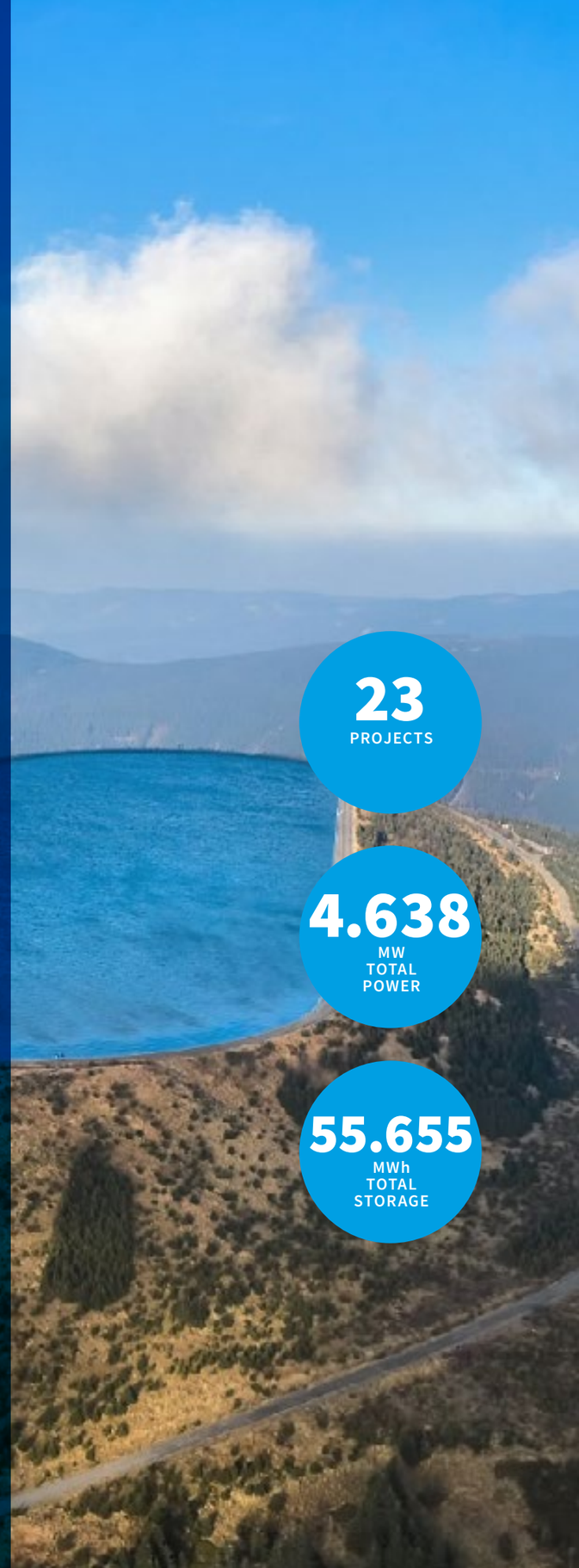
Reversible pumping stations are key to ensuring the transition to a carbon-neutral economy and the effective integration of non-manageable renewable energies into the electricity system.

This also adds flexibility to the system and stability to the grid.

Magtel is developing the BlueStorage © project, which consists of a distributed storage system based on reversible pumping stations.

The milestones achieved are:

- The granting by REE of the access and connection point for reversible pumping in Grandas de Salime (247 MW / 3,783 MWh).
- The granting of public water rights for the As Pontes reversible hydroelectric plant (250 MW / 3,907 MWh).



23
PROJECTS

4.638
MW
TOTAL
POWER

55.655
MWh
TOTAL
STORAGE

Green hydrogen

At Magtel, we contribute to promoting green hydrogen as an energy vector

Our R&D&I Division participates in the “Ad-Grhid” initiative, consolidating its position as a leading Spanish developer, builder, and operator for the development of the next generation of microgrids and H2 plants, which will result in lower energy costs and greater circularity for the projects developed by Magtel.

In this way, we are consolidating our position in providing solutions to residential and industrial customers in the energy field.

In addition, we have an internal working group on this technology, which is mapping out new steps to be taken with hydrogen as a key element in the transition to energy autonomy and decarbonization.

+200
MW DEVELOPMENT AND ENGINEERING PROJECT

Offshore wind power

We promote marine engineering for the development of large-scale offshore wind power, exceeding 400 MW in installed capacity.

The selection of strategic locations, backed by rigorous feasibility studies and resource assessments, ensures optimal use of offshore winds.

+400
MW DEVELOPMENT AND ENGINEERING PROJECT

Desalination

Drought is a cyclical problem, so it is essential to promote infrastructure that guarantees a stable long-term water supply, regardless of climate variability.

Since 2020, we have been helping to solve this problem through renewable desalination, using sustainable energy sources to enable a safe and reliable water supply in arid and coastal regions.

Renewable desalination ensures:

- Agricultural production in the region
- Water resources for industrial production
- Recovers areas degraded by desertification processes
- Contributes to the preservation of areas of high landscape value
- Enhances the value of the areas in which it is located

Desarrollo e ingeniería de proyecto

4
PROJECTS

180
Hm3
TOTAL
CAPACITY

Biogas

Magtel is developing a portfolio of biogas projects that will enable biomethane and other valuable by-products to be obtained from waste treatment.

Biogas seeks to recover the value of this waste generated throughout the process by applying a circular economy model in the primary sector, mainly in rural areas, contributing to their supply capacity and energy autonomy.

7
PROJECTS

400
GWh/YEAR

Ground-mounted photovoltaics

We have more than fifteen years of experience in ground-mounted solar energy

We develop large-scale sustainable infrastructure, from development and design engineering, within the framework of the energy transition.

We are one of the leading companies in the renewable energy sector in southern Europe. Over the years, we have promoted more than 50 projects, reaching 2,500 MW of installed capacity currently in operation.

This experience allows us to offer advanced and sustainable solutions, tailored to the specific needs of each client and project.

Floating photovoltaics

Development of 18 projects using this technology to integrate 1.1 GW into the system

Our projects are part of the energy transition towards a decarbonized model, in line with the Integrated National Energy and Climate Plan (PNIEC).

In this way, we contribute to the objectives of reducing greenhouse gas emissions and increasing the share of renewable energies.

Technical assistance for drafting wastewater collection and treatment projects

Developed for the Regional Ministry of Agriculture, Fisheries, Water, and Rural Development of the Regional Government of Andalusia

Zagrilla Alta-Baja and El Esparragal Project

Technical assistance for drafting projects for waste collection and treatment in the towns of Zagrilla Alta, Zagrilla Baja, El Esparragal, Zamoranos, and La Lagunillas, in Priego de Córdoba. The actions included:

- Waste collection works in these towns:
  - Pipelines for treatment to the wastewater treatment plant
  - Discharge into the receiving environment in accordance with the quality requirements of current legislation

Engineering services for the BESS project Camarreal (Santander)

Technical and administrative project for Fotowatio Renewable Ventures Servicios de España

The project develops a 50MW/4h energy storage system

- Our engineering activity applied to BESS (Battery Energy Storage Systems) focuses on the design, integration, and optimization of energy storage solutions to maximize the efficiency and reliability of the electricity grid.

Technical assistance for drafting the project Floating photovoltaic solar plant

To power the San Rafael de Navallana pumping station (Córdoba)

Developed for the Guadalquivir River Basin Authority

Technical assistance for project drafting, including:

- Report
- Administrative backgroun
- Alternatives study
- Structural calculations
- Electrical calculations
- Equipment specifications
- Economic study
- Price justification
- Legal processing study
- FRER documentation
- Environmental documentation
- C&D waste management project
- Quality control
- Health and Safety study
- Specific technical specifications
- Plans
- Budget