# 2022 Activity Report









# TABLE OF CONTENTS

- 6 Message from the President
- 8 About us
- 18 Social infrastructure
- 36 Training and Research
- 66 Corporate volunteering





# Message from the President

"I would like to express my gratitude to all the institutions that have collaborated and, especially, to all the employees of the Elecnor Group who have dedicated their time to showing the most human side of engineering."



#### Dear friends:

Once again this year, this activity report includes the most important initiatives carried out by the Elecnor Foundation in 2022. Through our projects we want to continue to contribute to building a better, more inclusive, and sustainable society, committed to the most vulnerable people. Our commitment is implemented through actions and projects in two main areas, the development of energy and water infrastructures and the promotion of training and research to encourage the personal and professional development of young people.

Beginning with our Social Infrastructure projects, our partnership with the Ronald McDonald Children's Foundation has continued to build on this throughout 2022. The "We care about the air you breathe" project concluded with the inauguration of the house by Fernando Padrós, Director General of Hospitals and Health Infrastructures of the Madrid Regional Government.

It also started operating the **Health Energy** project at **San Juan de Dios Hospital** in Senegal. Located in the city of Thiès, this hospital is known for treating all patients free of charge, avoiding any kind of discrimination and promoting respect and equality throughout the country. In collaboration with **ONC Manos Unidas**, we have installed a 250 kWp photovoltaic system connected to the grid. Thanks to this project, the 500,000 inhabitants of the Thiès region now have a safe hospital that will undoubtedly improve their quality of life.

We also continued our work in the Amazon with the **Quilombola community** in the municipality of Óbidos in Brazil. Our main aim is to provide electricity to the school and to ensure the supply of drinking water, but we also want to improve the quality of life of the 290 families in the community by building a library and an outpatient clinic. The project will be completed early in the second half of 2023.

Moving on to Training and Research, our commitment to a business compliance culture has been reflected in the initiatives carried out since the creation of the **IE-Elecnor Observatory on Sustainable Compliance Cultures**. **Compliance Matters**, a video podcast channel focused on the world of compliance, launched in mid-March.

Lastly, the second report of the **Compliance and Sustainability Observatory in Latin America** was finalised and will be presented in 2023.

Our collaboration agreement with **Deusto Business School** and **ICADE Business School** continues to support the **Corporate Leadership in Entrepreneurship and Innovation Programme** for a second year. The professionals who participate in this programme study the most cutting-edge entrepreneurial initiatives of large corporations, explained by the executives who have led them.

With a clear vocation for the different branches and disciplines of engineering, we continue to support an extensive grant programme with the Higher Technical School of Industrial Engineering (ETSII) of the Polytechnic University of Madrid, the Polytechnic University of Valencia, and the Jaime I University of Castellón.

Another of our most exciting educational initiatives is, without a doubt, **Growing in Emotional Prevention**. This programme, aimed at pupils in the 3rd, 4th, and 5th years of primary education, has already been rolled out in the Autonomous Community of Madrid, the Autonomous Region of Extremadura, and the Autonomous Community of Navarre, reaching over 22,450 children. We have tried to place special emphasis on schools in "Empty Spain", schools with a low number of pupils and special education centres.

In Vocational Training, the 10th edition of the **Specialist Course on Medium and Low Voltage Electrical Installations**was held at the Salesianos Deusto School in Bilbao.

For yet another year, we have continued to work towards achieving the **Sustainable Development Goals** set by the United Nations, implementing projects in energy, water, education, and health, as well as promoting the values of innovation and compliance.

I would like to express my gratitude to all the employees of the Elecnor Group who have dedicated their time to showing the more human side of engineering. I would also like to thank the Elecnor Board of Directors, the members of the Board of Trustees, the Advisory Board, the Director, and our Foundation's Corporate Volunteers for their support.

I invite you to take a closer look at all the projects carried out in 2022. I hope that reading this report will inspire new projects and mutual challenges. We end the year feeling optimistic, confident that, together with the different organisations, institutions, and people with whom we work, we will achieve a fairer, more equal, and better society.

Yours sincerely,

Fernando Azaola

President







# Our reason for being

### 2008

The **Elecnor Foundation** is created to mark the Elecnor Group's 50th anniversary.

### Mission

To contribute to the progress of society through the implementation of projects that improve people's living conditions and the conservation of the environment.

## Scope of action

Linked to Elecnor's activity, the Foundation acts primarily in those countries where the company is present and in projects always related to the business lines in which Elecnor is a recognised operator.

The Elecnor Foundation has brought **water and energy** to some of the **most disadvantaged communities** in Ghana, Senegal, Angola, the Democratic Republic of Congo, Cameroon, Mexico, Honduras, the Dominican Republic, Nicaraqua, Peru, Brazil, Chile, and Uruquay.

# We are agents of change and well-being

The Elecnor Foundation is our main tool for making ethical values a reality, namely **change**, **innovation**, **sustainability**, **and cooperation**.

For some years now, there has been a **corporate volunteering** programme, which allows any Elecnor employee to contribute their time and effort to make some of the Foundation's projects a reality.

The Elecnor Foundation is committed to boosting talent among young people, and to this end it has established numerous **agreements with universities and vocational training schools**, which has enabled many students to enter the world of work.



14 YEARS OF EXPERIENCE







# Board of Trustees

Governance structure

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President

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JESÚS FÉLEZ MINDÁN

JUAN MOSCOSO DEL PRADO HERNÁNDEZ

JAVIER ESQUIVIAS VILLALOBOS



# Management

JORGE BALLESTER SURROCA
Director





# We believe in the future

The Elecnor Foundation fulfils the Elecnor Group's commitment to improving society and works to highlight the more human side of engineering through actions in two main areas:



## Social infrastructure

The design and construction of water and energy infrastructures in those communities that need them most, albeit respecting the environment and focusing on innovation and sustainability.



# Training and Research

Support for training and research to promote the professional development of young people, fostering relations between companies, public institutions, and the education sector.

The Elecnor Foundation continues to establish partnerships with **strategic partners** with the aim of exchanging best practices and implementing the most effective technical solutions to meet the challenges that arise in the countries where it operates.

The combination of innovation and sustainability can guarantee the future of new generations.

# Our values are on the rise

Both its action strategy and the Foundation's values are linked to the **Sustainable**Development Goals (SDGs) proposed by the United Nations in the **2030 Agenda**.

## Change

All our projects share a common goal: to improve the quality of life and future prospects of the population.

## Innovation

Elecnor's R&D&I potential enables it to implement cutting-edge solutions that fully meet the needs of the communities in which they are developed.

## Sustainability

All our projects are designed with future generations in mind.

They are therefore environmentally, technically, economically, and operationally viable.

# Cooperation

The Foundation encourages the involvement of Elecnor's employees, customers, suppliers, and shareholders, as well as all those public and private entities that share our desire to move towards a better world.





# Our Code of Ethics above all else

The Elecnor Foundation is part of the Elecnor Group's Compliance System and complies with the principles of the Code of Ethics and the Compliance Policy, which ensure that any project is carried out in accordance with the highest ethical standards.

The Elecnor Foundation applies the principle of zero tolerance to bad practices in terms of ethics and integrity and in accordance with the laws in force in the countries in which it operates.

Its actions are rooted in the fulfilment and defence of human and labour rights, care for the environment, and the prevention of occupational hazards.



# We are working to make the SDGs a reality

The business philosophy of Elecnor and its Foundation is fully aligned with the **Sustainable Development Goals** (SDGs), approved by the UN in 2015.

The Elecnor Group is a Signatory Partner of the United Nations Global Compact and promotes the SDGs linked to its activities.

The 2030 Agenda for Sustainable Development and the Action Plan for the implementation of the 2030 Agenda are the international and domestic framework for the Foundation's future actions.

Partnerships continue to be forged between various domestic and international

States, private companies, NGOs, universities, as well as international cooperation organisations and agencies, in order to combine their efforts, knowledge, and experience in achieving the Sustainable Development Goals.

In 2022, all Elecnor Foundation projects address one of the following SDGs:







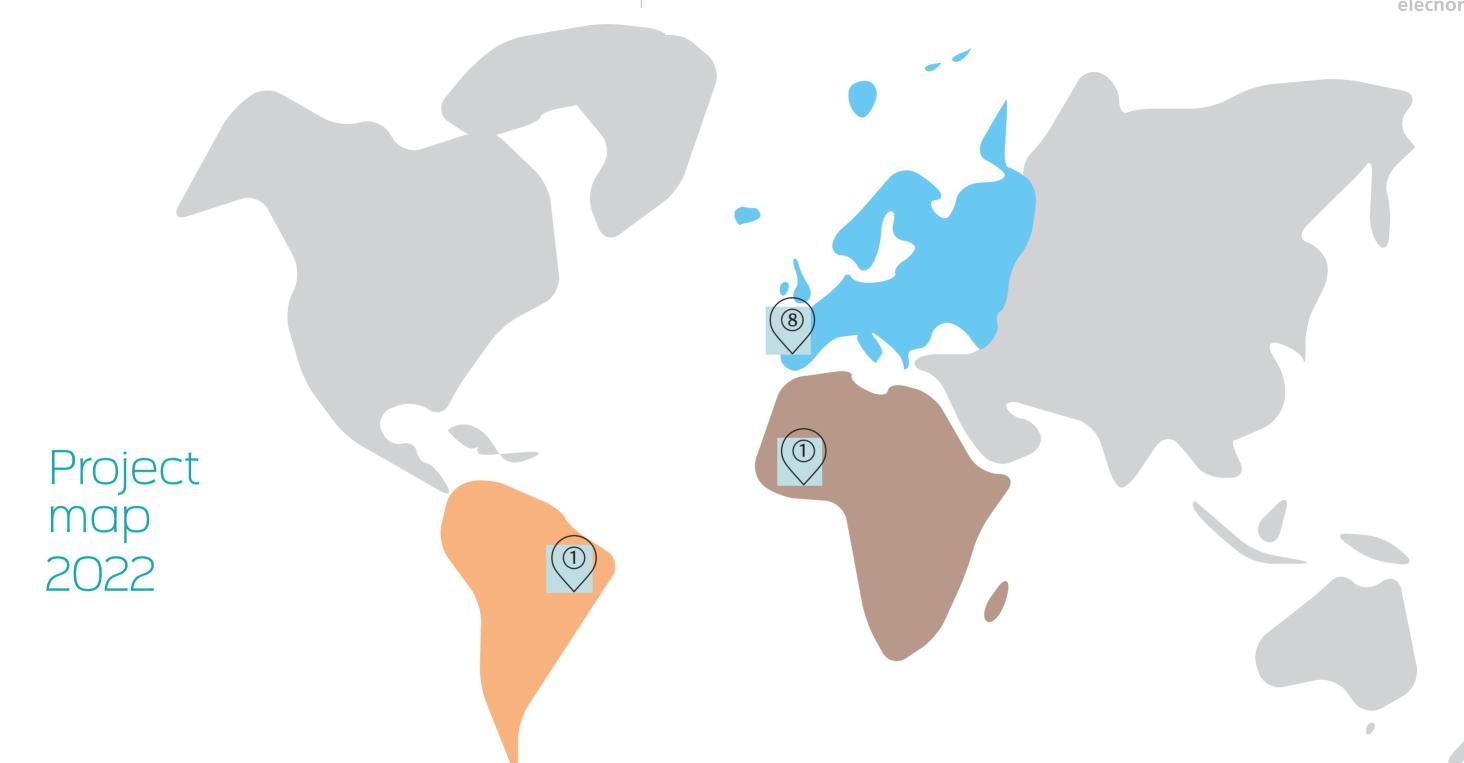
























"From the outset, a bond was created that has helped us grow in terms of environmental and sustainable alternatives, energy efficiency projects, and the implementation of systems that improve care for families"

**Project** 

We care about the air you breathe

Social infrastructure

Spain | RONALD McDONALD HOUSE MADRID

Status: INAUGURATED



### Clean air for those who need it most

The Elecnor Foundation has been a member of the house's board since 2013, the year in which Elecnor built this residence for 30 families and implemented the energy efficiency project in its facilities.

The Ronald McDonald House in Madrid offers a "home away from home" for families who travel far from their usual residence for their child to receive medical treatment.





The onset of the COVID-19 pandemic made it necessary to ensure indoor air quality, especially in highly sensitive locations such as Ronald McDonald House.

And so the project "We care about the air you breathe" was born.

The aim of this project was to minimise the possible exposure of the house's users to COVID-19 and other viruses, with air improvement and renovation measures, as well as other complementary measures.

The technology implemented in this project has been chosen by the Centre for the Development of Industrial Technology (CDTI) in the call for **R&D** and **Investment Projects to** address the health emergency declared due to the COVID-19 disease.





During its development, the project has taken into account the recommendations of international agencies and competent and experienced professional organisations such as the World Health Organisation (WHO), ASHRAE, CDC, REHVA, and the Federation of Indoor Environmental Quality Associations (FEDECAI).

Fernando Padros, Director General of Hospitals and Health Infrastructures of the Madrid Regional Government, inaugurated the house: "Having a space where families can live together to support hospitalised children and having the means to improve air safety are factors that undoubtedly help to facilitate and improve the quality of the time they have to stay here".

### MAIN AIMS OF THE PROJECT

To **treat** indoor air, improving its quality by eliminating pollutants that are harmful to the health of the people living in the house.

To continuously **monitor** air quality by measuring organic compounds and particulate matter.

To carry out **temperature control** and counting of people entering the house as a measure to avoid the risk of infection.

To **maintain** the installations properly, carrying out the actions legally established, which are increased due to the requirements of the installed equipment.

To **operate** the building's installations and continuously **monitor** their operation in order to avoid malfunctions that could affect not only the comfort within the house, but also the indoor air quality.

### **PROJECT DETAILS**

- 1. Installation of **air filtration** systems in central air conditioners:
- ▶ SIPAP® active polarisation systems. These systems reduce the energy consumption of air conditioners due to their low pressure drop, reduce CO₂ emissions and have a much lower maintenance cost compared to traditional filters.
- ► SFEG® photocatalysis systems. These systems treat the air flow of air conditioners in order to eliminate micro-organisms (viruses, bacteria, fungi, and yeasts) and reduce the risk of contamination by chemical compounds (NOx, VOCs, SO₂, etc.). They combine the ultraviolet germicidal irradiation (UVGI) and oxidation by hydroxyl radicals and deactivate the DNA and RNA of micro-organisms.
- 2. **Purification** systems in communal areas:
- ▶ SIAV air purification and filtration systems with UVGI. One of the keys to the healthy conditions in the house is the renewal and cleaning of the air in the different rooms, and it is very important to treat the air in the areas with the highest occupancy density, such as the activity rooms and the dining room. SIAV systems improve indoor air quality by filtering pollutants and thoroughly purifying the air where they operate.



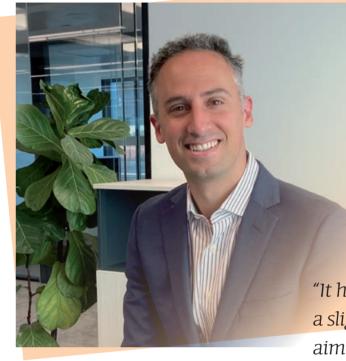














"It has been very rewarding, especially a slightly different way of working. The aim here is to help people.
Cooperation leads to more

cooperation"



Project

Health Energy

Social infrastructure

Senegal | SAN JUAN DE DIOS HOSPITAL

Status: COMPLETED





# Energy is health

The **San Juan de Dios Hospital** is a private, non-profit centre. Its management is entrusted to the Hospital Order of the Brothers of St John of God, which is responsible for implementing all domestic public health programmes to provide a comprehensive, high-quality health service accessible to disadvantaged groups.

### **PROBLEMÁTICA**

The San Juan de Dios Hospital in Thiès, Senegal, is particularly renowned for treating all patients free of charge without distinction, avoiding any kind of discrimination and promoting respect and equality throughout the country.

However, the obsolescence of its facilities results in a high risk of power supply interruption, hindering the work of the hospital's doctors and nurses and endangering the life and health of patients, while generating high maintenance costs.





### **SOLUTION**

The photovoltaic system implemented by Health Energy provides **50% of the hospital's monthly electricity consumption**. This will reduce the bill significantly. Equipped with a remote management system that allows real-time visualisation of electricity consumption levels and the allocation of each service, it will allow savings to be redirected towards other investments.

The technical solution adopted is based on the installation of a 250 kWp photovoltaic system connected to the grid, without a storage system and combined with a diesel generator. The purpose of this system is to reduce energy consumption and ensure an adequate power supply for the hospital's medical services.

Savings in energy costs will also allow the purchase of modernised machinery for the detection and treatment of diseases and of drugs and vaccines to reduce the country's mortality rate.











Thanks to this project in partnership and co-financed with the NGO Manos Unidas, the 500,000 inhabitants of the Thiès region will have a safe hospital that will undoubtedly improve their well-being and quality of life.























"When I was told that I would be involved in the project, I was happy and motivated.



What we have installed in this project is the largest solar farm in Brazil. We had to develop a rather innovative engineering solution"

Project

H<sub>2</sub>OMe

Social infrastructure

Brazil | MULTIFUNCTIONAL SPACE

Status: UNDER IMPLEMENTATION





# Water, electricity, health, and culture for the community

The Quilombola community is made up of 290 inhabitants living in the municipality of Óbidos, in the Brazilian state of Pará.

Its public school, which accommodates 95 children, is forced to manually collect water from a tributary of the Amazon and has serious energy problems.

H<sub>2</sub>OMe Muratubinha is an innovative project that will provide a change in the quality of life of the Muratubinha community.

Its main aims are to provide access to renewable energy, to drinking water, to offer a medical facility for families, as well as to build a social space for the implementation of various educational and audiovisual activities.







ELECTRICITY	To provide electricity to the school through <b>photovoltaic energy</b> .
WATER	To pump water from the well to the water treatment plant in order to provide them with <b>drinking water</b> at all times

For various activities including:

MULTIFUNCTIONAL An audiovisual library SPACE

An outpatient clinic equipped with the basics to serve the community





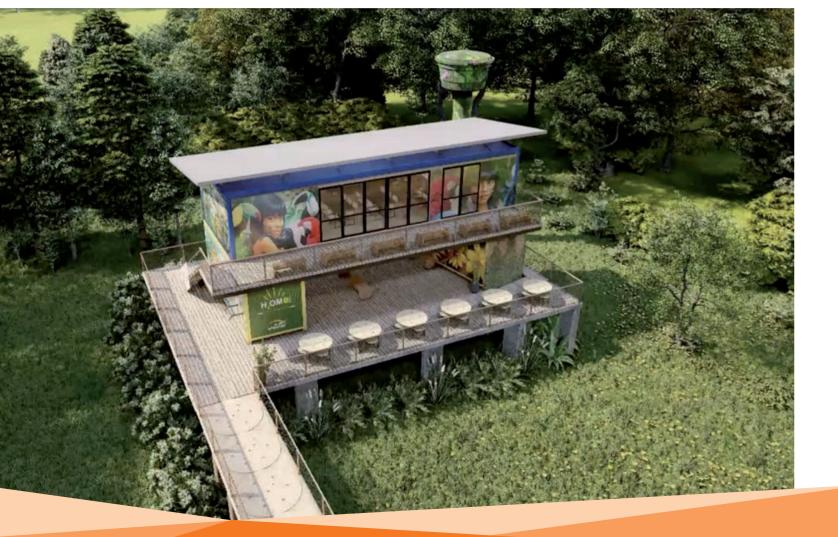
















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Project

IE-ELECNOR OBSERVATORY ON SUSTAINABLE COMPLIANCE CULTURES

Training and Research

International





## We promote a culture of compliance

At the end of 2019, the **Elecnor Foundation** signed an agreement with the **IE Foundation**, in collaboration with the law firm **Eversheds Sutherland** as technical advisor, for the creation of the **IE-Elecnor Observatory on Sustainable Compliance Cultures**.

The aim of the Observatory is to provide society and companies with tools to improve the compliance management of organisations, always taking into account ethical principles and the expectations of various stakeholders on social and environmental issues.

The aim is for this initiative to contribute to progress in the fight against corruption in business, in the defence of competition law, human and labour rights, and in respect for the environment.

These are the activities conducted in 2022:

### **VIDEO PODCAST CHANNEL**

In the digital world, trends are always emerging that open up new communication opportunities for organisations, such as podcasting and video podcasting.

In mid-March, **Compliance Matters**, a **video podcast** channel for a 360-degree view of the business, was launched.

In the first year of the launch, **six chapters** have been published, providing insight into **trends and best practices** from top experts with multidisciplinary backgrounds.

In addition, a podcast version is available on all major audio platforms.



### A LEADING COMPLIANCE WEBSITE

In addition to good information architecture, the website's ethos is one of continuously renewing and updating content. For this reason, the Observatory's editorial and content team produces **monthly publications**, supported by professionals and people who are leaders in compliance. The synergy that the Observatory has with IE Law School provides high quality publications:

- **Over ten articles** for the Observatory's website.
- ➤ 12 Compliance Pills: practical factsheets to help companies and organisations implement and enforce the highest compliance standards.







#### ETHICS AND ARTIFICIAL INTELLIGENCE EVENT

New technologies must not only comply with the legal framework, they must also meet ethical criteria. The IE-Elecnor Observatory emphasises the culture of regulatory compliance alongside artificial intelligence; both of these aspects optimise the effectiveness and efficiency of organisations, while positively impacting society by combating corruption.

The IE-Elecnor Observatory's 2022 event explored **how artificial intelligence, ethics, and compliance can be brought together**.

The event was attended by Enrique Aznar, academic director of the Observatory; Richard Benjamins, head of Artificial Intelligence and Data Strategy at Telefónica; Javier Camacho, expert in Ethical Consultancy and professor in Ethical Management in Business, and Manuela Battaglini, lawyer and expert in Digital Ethics.

One of the main conclusions was that artificial intelligence can not only improve compliance for different aspects within the company (such as cybersecurity), but that it also provides options to create new business opportunities in line with compliance requirements.





## SECOND REPORT "COMPLIANCE AND SUSTAINABILITY IN LATIN AMERICA"

The second report of the IE-Elecnor Observatory on Sustainable Compliance Cultures, to be launched in 2023, will focus on compliance and sustainability in Latin America. It has several complementary aims:

- ➤ To follow up the Observatory's first study on the development of the conceptual framework for a culture of compliance and sustainability.
- ➤ To analyse the development of compliance and sustainability policies in key Latin American countries.
- ➤ To carry out a comparative study of the cultural dimensions related to the values of compliance and sustainability both in Spain and in the countries in question.
- ➤ To encourage the dissemination of a culture of compliance and sustainability in Latin America.







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Project

CORPORATIVE LEADERSHIP IN ENTREPRENEURSHIP AND INNOVATION

Training and Research

Spain | DEUSTO BUSINESS SCHOOL

Status: COMPLETED





# Shaping tomorrow's leaders

#### 2021-2022

Entrepreneurship as a vehicle for innovation is one of the paradigms of the new economy.

Large corporations have adopted startup thinking and business models as tools for growth. Corporate entrepreneurship programmes and open innovation mechanisms such as incubators, accelerators, and even investment platforms such as corporate venture capital are commonplace in large companies around the world. In turn, the focus of corporate social responsibility is shifting from welfare to socially responsible investment (ESG).

The professionals who take this programme sponsored by the **Elecnor Foundation**, taught jointly by **Deusto Business School** and **ICADE Business School**, study the most cutting-edge entrepreneurial initiatives of large corporations, explained by the executives who have led them.

The 40-hour programme runs from October to July, with a final project to be presented in July before a panel of experts from the **University of Deusto** and **Comillas Pontifical University**, chaired by a high ranking authority.

At the same time, the participant is supported throughout the course by a tutor and has access to a series of complementary workshops that help him or her to focus the final project that is developed by hybrid teams of students from the Public and Corporate Entrepreneurship Leadership programmes (PLPE-PLCE):

- ➤ Public Speaking Workshop
- ➤ Design Thinking Workshop
- ➤ Project Management Workshop

## CLOSING CEREMONY OF THE DEUSTO BUSINESS AND ICADE SCHOOL INNOVATION LEADERSHIP PROGRAMMES

The former First Vice-President of the Spanish Government and President of the Equality Commission of the Congress of Deputies, **Carmen Calvo**, was in charge of closing the 2021-2022 academic year on Wednesday 29 June at the Madrid headquarters of Deusto Business School.

On 4 November, the Graduation Ceremony of the 2021/2022 graduating classes of the Deusto Business School-Executive Education programmes was held in the **University of Deusto** auditorium at the **Bilbao Campus**. The dean of the faculty, Alvaro de la Rica, highlighted the collaboration with the Elecnor Foundation.

Below are the comments made by the two Elecnor executives who completed the 2022 programme:



#### Luis Fernández Gorostiza - Audeca Director

"What has struck me most about the corporate entrepreneurship leadership programmes (which is the one I have taken) is how examples

of successful companies have been included in all the course modules. In addition, it being a course with students from various professional backgrounds provides a very broad perspective and opens our minds when it comes to putting innovation into practice. Lastly, it has allowed us to connect with people who can provide us with startup contacts that we can use and apply to our business activity".





#### Manuel Vázquez - Enerfín Production Manager

"Innovation drives growth and entrepreneurship within corporations and is a fundamental tool for accelerating processes. This programme has enabled me to explore new ways of evolving, developing, and transforming our business to meet current and future challenges".

### 2022-2023

#### LEADERSHIP IN ENTREPRENEURSHIP AND INNOVATION (PLEI) PROGRAMME 2022-2023

For the 2022-2023 academic year, the programme has evolved and the PLPE and PLCE (Public and Corporate Entrepreneurship Leadership) programmes have been merged.

In this way, professionals from the public and private sectors coexist in a single ecosystem and can share their experiences more closely.

**José Bayón**, CEO of **Enisa** (Empresa Nacional de Innovación) took part in the inaugural session of the Entrepreneurship and Innovation Leadership Programme (PLEI) on 24 October to explain to the participants some basic aspects such as the importance of entrepreneurship and open innovation.















"We addressed not only the risks that children face in their immediate environment, at home, in the street, at school, but also a philosophy of job guidance.

When we approached the Madrid Regional Ministry of Education, they loved the project and wanted to participate in it"



Project

**GROWING IN PREVENTION** 

Training and Research

Spain





### Prevention first and foremost

In 2018, the **Elector Foundation** set itself the goal of promoting its slogan "**safety is non-negotiable**" among primary school children. This is how the **Growing in Prevention** project was launched and, four years later, it is still evolving.

Initially, it was an educational programme with face-to-face activities. But in 2020, on the same day that educational activities began in schools, a state of alarm was declared in order to manage the health situation caused by COVID-19 and, therefore, it was no longer feasible to run the programme face-to-face.

The Elecnor Foundation developed a new project: **Growing in COVID Prevention.** This was an educational programme with digital content, an online tool that allowed teachers to provide the curricular activity remotely, teaching COVID-19 prevention measures





through fun audiovisual content and, in this way, provide the educational community with prevention tools with the appropriate professional advice.

In 2020, the Elecnor Foundation, aware of the impact of the health crisis and its psychological effect on minors, designed a new educational project called **Growing in Emotional Prevention**. It was presented to the **Regional Governments** of **Madrid** and of **Extremadura** for development in the 2021/2022 school year, and which was subsequently joined by the **Community of Castilla-La Mancha** and the **Autonomous Community of Navarre** in the 2022/2023 school year. This has a bilingual format (Basque/Spanish), adapting all the materials and professional equipment.

22,400+ STUDENTS

The acceptance by all institutions was very positive and they decided to join the project.





	STUDENTS
REGIONAL GOVT. OF EXTREMADURA	2,612
NAVARRE AUT. COM.	3,121
TOTAL	5,733

# UNTIL 2022, GROWING IN PREVENTION HAS BEEN IMPLEMENTED IN 225 SCHOOLS (35 SPECIAL EDUCATION CENTRES) REACHING A TOTAL OF 22,457 PUPILS

The forecast for 2023 is as follows:

- ➤ A new agreement has been reached with the **Regional Government of Castilla-La Mancha**. The programme will be developed during the 2022/2023 school year with the aim of reaching **1,676 educational centres**, of which 1,367 are public, 126 are state subsidised, and 183 are private.
- ➤ A total of 1,676 schools, of which 1,367 are public, 126 are state subsidised, and 183 are private, are awaiting a response from the Regional Ministry of Education of the Community of Castile and León.
- > It is expected to reach 30,000 pupils in over 325 schools.





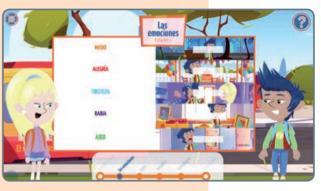


















# We are committed to quality training

One of the main aims of the Elecnor Foundation is vocational training linked to the different branches and disciplines of the electricity sector.

This year is the 10<sup>th</sup> edition of the **Specialist Course on Medium and Low Voltage Electrical Installations** for Vocational Training students at the **Salesianos Deusto School in Bilbao**.

The course was given at the same facilities used for the training and retraining of Elecnor workers.

16 students have completed the 10<sup>th</sup> edition of this course at Salesianos Deusto.

This initiative highlights the collaborative nature of the Foundation, which joins forces with the **Salesianos Deusto School** to offer the course, providing the design of the training programme, as well as the necessary equipment to implement it.







Project

SPECIALIST COURSE ON MEDIUM AND LOW VOLTAGE ELECTRICAL INSTALLATIONS

Training and Research

Spain | DEUSTO SALESIANOS

Status: COMPLETED





# We turn companies into the best classrooms for learning

The goal of this initiative is to train students who, in the near future, could be professionals specialising in Elecnor's own activities and become site managers.

The **Dual Method of Vocational Training** allows students to obtain the appropriate knowledge, not only at the educational institution, but also by undertaking practical work experience in companies with the supervision of a tutor

In 2022, a collaboration agreement was signed with **IES Cuatro Caminos** (Don Benito, Badajoz).

Three students have completed the work experience corresponding to their first year of studies. Two students worked at the **Astexol Thermosolar Power Plant** in **Badajoz** and a third student at the electrical substation of a photovoltaic park located in **Cuenca**.

In September 2022 they started their second year of training.





Programme

HIGHER VOCATIONAL CERTIFICATE IN RENEWABLE ENERGIES

Training and Research

Spain | DUAL VOCATIONAL TRAINING





### We reward talent and hard work

For 30 years, the Elecnor Group has been collaborating with the **Higher Technical School of Industrial Engineering** (ETSII) and the Department of Electrical Engineering (DIE) of the **Polytechnic University of Valencia** through the **Master's Final Project Grant Programme**.

The programme is aimed at students in the final year of Master's Degrees in Industrial Engineering and Energy Engineering for Sustainable Development.

In each edition, five students are awarded grants for the completion of their final Master's projects focused on electrical and energy engineering.

Today, many of these students are part of Elecnor's staff and hold senior positions.

Elecnor grants have also proved to be an effective way of maintaining university-business relations.

Here is the list of projects that have won a grant in recent years:





### 2021-2022 GRANTS

- ➤ Design and development of an instrumentation system for a trapezoidal permanent magnet machine test bench (Brushless DC PMSM).
- > Design of a solar inverter for domestic photovoltaics.
- ➤ Analysis of comprehensive energy rehabilitation measures for a block of flats in the municipality of Valencia occupied by families affected by energy poverty.
- Design of the electrical installation of an industrial plant (or building) applying energy optimisation techniques and harmonic analysis and mitigation.
- ➤ 50 kW photovoltaic installation project for self-consumption for an educational centre. Self-consumption option eligible for compensation.

### **2022-2023 GRANTS**

- ➤ Design and implementation of a 1.5 kW single-phase solar inverter.
- ➤ 50 kW photovoltaic installation project for selfconsumption for an educational centre. Self-consumption option eligible for compensation.
- Analysis of comprehensive energy rehabilitation measures for a block of 16 flats in the municipality of Paterna occupied by families affected by energy poverty.

Programme

ELECNOR FOUNDATION-UPV FINAL MASTER'S PROJECT GRANTS

Training and Research

Spain





# Creating synergies with the academic world

In 2021, the Universitat Jaume I of Castelló (UJI), the Elecnor Foundation, and Elecnor signed a general collaboration agreement for the establishment and development of academic, cultural, and scientific relations.

The final undergraduate project selected in 2022 was the design of a photovoltaic canopy for the UJI car park.

Its aim is to design a photovoltaic canopy for the four parking areas in front of the University building, as they are not protected by trees.

To utilise these roofs, solar photovoltaic panels will be placed on the four canopies to reduce not only the energy consumption of the electric vehicle chargers, but the consumption of the university building as well.

Once again this year, the Elecnor Foundation promotes collaboration between companies and educational centres in the interests of progress, innovation, and the benefit of society.





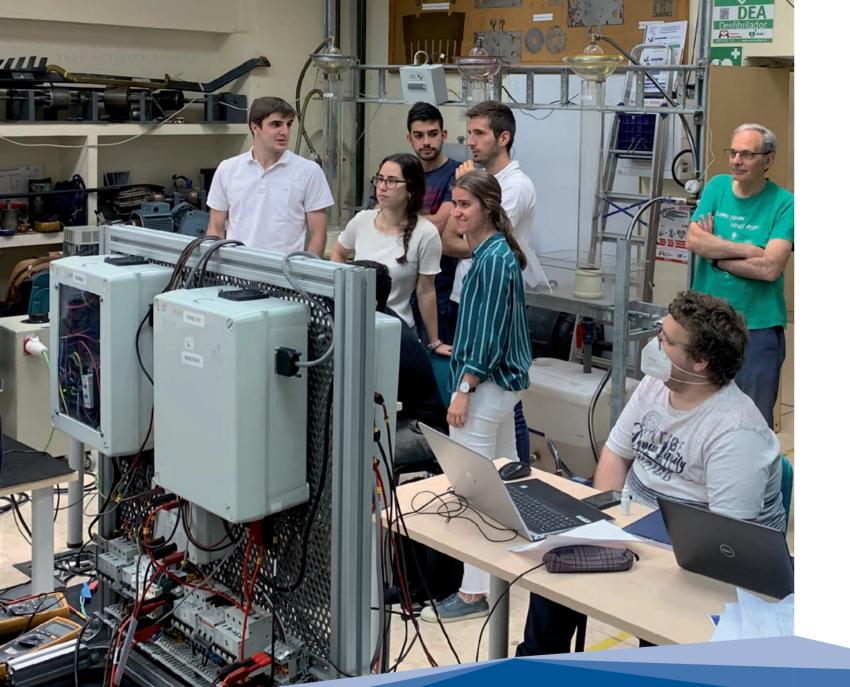
Programme

**TFG GRANTS** 

Training and Research

Spain | UNIVERSITAT JAUME I





# An innovative project full of energy

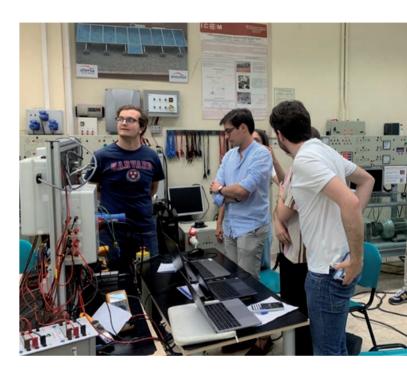
As a result of the collaboration between the **Elector Foundation** and the **Electrical Engineering Department of the ETSII-UPM**, the **Ingenia-Store project** was set up as part of the course "**Engineering an Electrical System**".

In three years, the aim is to incorporate the study of storage systems with lithium batteries linked to the production of electrical energy from renewable sources into this subject.

The approach of this subject of the Master's in Industrial Engineering is based on a CDIO (conceive-design-implement-operate) structure, with a high degree of practical content and is oriented towards encouraging teamwork and environmental awareness.

During the Ingenia-Store project, the design and construction of three experimental units will be carried out, which will be developed to manage the charging, discharging, and storage of this type of battery.

The aim of the project is to familiarise students with the various technological methods applied to the testing and classification of these types of batteries, as well as the possible control strategies that are best suited to their use in different industrial settings.







Project

**INGENIA-STORE** 

Training and Research

Spain | ETSII-UPM





# A visit that the industrial engineers of the future will never forget



As part of the aforementioned collaboration agreement with the **UPM's School of Industrial Engineering** (ETSII), the Elecnor Foundation is organising a visit for first-year students of the Master's Degree in Industrial Engineering, specialising in Electrical and Energy Engineering, to the solar thermal plants that Celeo, a subsidiary of the Elecnor Group, has in Ciudad Real.

**Elecnor Group** staff explained to the students how a parabolic trough collector solar thermal plant works and its construction process, paying special attention to occupational risk prevention.

Afterwards, the students visited **ASTE 1A** and **ASTE 1B** alongside Elecnor's maintenance and operation staff.





Visit

TECHNICAL VISIT TO THERMOSOLAR ASTE

Training and Research

Spain | ETSII-UPM Status: IN PROGRESS





The Elecnor Foundation promotes the social commitment of Elecnor employees through corporate volunteering.

Over the past few years, volunteers have demonstrated their spirit of solidarity and responsibility by dedicating their time and efforts to improving the quality of life of those who need it most.

Their solidarity actions have reached places as far apart as Cameroon, where Elecnor volunteers gave a course on photovoltaic solar energy in 2019, and La Nopalera (Mexico), where in 2020 they distributed protection kits against the coronavirus.

However, the COVID-19 pandemic interrupted all these initiatives and, in order to protect volunteers' health, the Elecnor Foundation decided to postpone its solidarity work until 2023.

In this new year that is beginning, the altruistic spirit of Elecnor's employees will again be reflected in new humanitarian initiatives that will undoubtedly fill the Foundation with pride once more.

Corporate volunteering



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