2016 ACTIVITIES REPORT





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As the Chairman of the Elecnor Foundation, it is my pleasure to present our Activities Report for 2016, a year during which we made fresh strides in our steadfast commitment to the progress and integrated development of the communities in which the Elecnor Group is active.

Throughout the year progress was made on the social infrastructure projects that have now been underway for several years: The H2OM@project, for example, is an ingenious response to the scarcity of drinking water in developing countries. In 2016 the system was installed in Angola and it will become fully operational in 2017.

In 2016, work also continued, in partnership with Plan International Spain, on the Starting Out and Learning in Digital project (PEAD) in Nicaragua. The aim of this initiative is to support education and training for local people, in particular children and adolescents from the Miskita

WE ARE ESPECIALLY PROUD OF THE EFFORT MADE TO INVOLVE THE ELECNOR GROUP'S OWN EMPLOYEES IN SOME OF THE CHALLENGES FACED BY THE FOUNDATION ⁹⁹

ethnic group, through the sustainable use of ICTs.

We are especially proud of the effort made to involve the Elecnor Group's own employees in some of the challenges faced by the Elecnor Foundation. One essential initiative in this regard is our Corporate Volunteer programme, which took place for the third time in 2016. The country chosen was Ghana, where in 2013 we carried out the "Back-up System Systems" project with the aim of providing a stable electricity supply to ensure the smooth operation of facilities such as operating theatres and emergency and maternity units in six hospitals and three clinics.

In the area of training and research, activities organised by the Elecnor Foundation Renewable Energy and Energy Efficiency Chair included the II Laboratory of Ideas on Renewable Energy, a forum where leading experts debate how to rise to the challenge of achieving a safer, more competitively priced and decarbonised energy supply. A new initiative this year was the placement at our solar thermal plants in Ciudad Real of two students from the Nuevo Pachacútec Higher Technological Institute in Peru, with the aim of familiarising them with the key features of solar thermal technology.

The Elecnor Foundation, which was established in 2008, is preparing to mark its tenth anniversary by continuing to serve society in the manner which has distinguished the Group since the outset. And it is doing so with a particular focus on the most disadvantaged communities to which the company has access via its activities in the various countries in which it operates. As the Group's key tool for exercising social responsibility, the Foundation which I have the honour of chairing will continue to ensure, with its projects and spirit of openness, that it acts in accordance with Elecnor's notion of sustainability.

I invite you to find out more about our principal activities in 2016 in this report.

Yours sincerely,

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Fernando Azaola Chairman of the Elecnor Foundation

Proyecto H₂OMe, Angola



The H₂OME project is an ingenious response to the shortage of drinking water in developing countries. In 2016 the system was installed in Angola and it will start operating in 2017.

Built at a cost of EUR 767,000, it will supply drinking water to 10,000 people in Gove in Huambo province.

To help address the challenge of accessing drinking water in vulnerable environments, the Elecnor Foundation has developed an innovative project featuring cuttingedge technology for the supply of drinking water:

 H_2OMe is a versatile and sustainable solution developed by the R&D&i unit of Elecnor. It is made from disused shipping containers that are recovered, redesigned and restored to create a two-level mobile structure that is easy to transport and install. Inside, the H_2OMe module hosts a water purification plant and a large multi-purpose space for community use which has an audiovisual library.

A 100 m2 audiovisual library which will initially be stocked with over 3,000 books, computers and DVDs and a television for screening documentaries and films that will help to provide students with a better education. And to ensure optimum use of these facilities, the teachers of Gove school (Huambo province) will draw up a timetable so that children can take advantage of a space that will provide invaluable access to information and education. The installation of the H_2OMe module in Angola, means the school and health centre in Gove have a direct supply of water, which is also distributed via eleven sources throughout the municipality so that the maximum number of people benefit.

> 10,000 POTENTIAL BENEFICIARIES SUPPLYING 50 LITRES OF WATER PER PERSON AND DAY

PREVENTION OF DISEASES TRANSMITTED BY WATER

WATER FOR ALL

The Sustainable Development Goals call for universal and equitable access to safe and affordable drinking water by 2030. According to Plan International, 4000 children die every day because they do not have access to an adequate supply of clean water. Perfectly preventable diseases such as acute diarrhoea, cholera, dysentery and typhus are responsible for 1.5 million child deaths every year. Water is essential for food security, human health and the environment, so it is essential that it is promoted and cherished.



HOMe

66 AN INVESTMENT OF EUR 767,000 ?? 66 THE TOWN OF GOVE IN ANGOLA WILL HOST THE FIRST H₂OME MODULE IN AFRICA **?**

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Starting Out and Learning in Digital (PEAD) project, Nicaragua

The aim of this project is to improve education and training for local people, in particular children and adolescents from the Miskita ethnic group, through the sustainable use of ICTs. To carry out this initiative, the Elecnor Foundation took part with Plan International Nicaragua in the Spanish International **Development Cooperation** Agency (AECID)'s 2015 funding round for Non-Governmental Development Organisations.

The digital kiosk is a community space set up in a classroom attached to the community school which offers access to basic telecommunications services, i.e. telephony and internet, and educational materials. The project is based on an inclusive community management model, and its long-term viability is ensured by charging small amounts for services and the installation of a premiumquality photovoltaic system which ensures that the kiosk can operate off-grid.

Back-up battery systems have been installed for periods when there is insufficient solar radiation which can power the kiosk for three days if required. There is also a satellite connector which permits four hours of data downloading per day, telephone communication, the recharging of mobile phones and document printing and scanning. These services will finance maintenance and enable green jobs to be created.

Moreover, this model can also be used in other areas of Nicaragua where the social and technological divide is pronounced. Achievements in 2016 included:

• The establishment of an inclusive and sustainable model at community level through the training of leaders, the development of the business model type, the purchase and installation of the necessary technological resources and the training of the technical team.

- The development of technological skills through ICTs, the provision of technological literacy training for teachers, the installation of IT packages for accessing information on culture, education, healthcare and child protection, and the promotion of reading among children, adolescents and young adults through the use of free educational software.
- Prioritisation of the use of renewable energy and ICTs in the community development plan for six communities. This involved updating the community development plan with the input of children, adolescents and young people, and reporting to the community and the regional authorities.
- The transfer of the model to other communities through participatory sessions, the preparation of a narrative and audiovisual training document, the preparation of a technical and financial report, the organisation of national events, etc.

PROYECTO: EMPRENDIEDO Y APRENDIENDO EN DIGITAL

66 PLAN INTERNATIONAL IS PRESENT IN 70 COUNTRIES THROUGH DEVELOPMENT PROJECTS THAT DIRECTLY BENEFIT 81.5 MILLION CHILDREN **?**

PROJECT FACT FILE

Investment: 319.236 €

Funding: AECID (40%) 2015 Innovation Financing Round

Duration: 18 months. January 2016 - June 2017

Direct beneficiaries: 3,778 people

OBJECTIVE AND RESULTS OF THE PROJECT

Specific objective:

"Improvement of the living conditions of six communities through an affordable and inclusive ICT service"

- 1. Establishment of an **inclusive and sustainable business model** at community level
- **2. Development** of technological skills in the community through access to ICTs
- **3**. Prioritisation of the use of renewable energy and ICTs in the **Community Development Plan**
- 4. Transfer of the business model to other communities

TACKLING THE MOST SEVERE POVERTY

The PEAD project carries out actions in the communities of Francia Sirpi in northern Nicaragua. It is the country's most vulnerable region in social terms, with a severe poverty level of 71%. It is also a region with a high concentration of indigenous people. In fact, it is home to 70% of all the indigenous population and those of African descent throughout Nicaragua And within this segment the Miskitu are the largest ethnic group, representing 91% of the communities included in the project.

The lack of electricity means that are serious contamination issues stemming from the use of kerosene lamps, batteries, and, in very remote areas, the use of diesel motors. Among the indigenous communities there are cultural obstacles that hinder the implementation of new technologies and access to energy, thus increasing their technological isolation. THE FRANCIA SIRPI REGION WHICH HOSTS THE PROJECT IS THE MOST VULNERABLE IN NICARAGUA, WITH A SEVERE POVERTY LEVEL OF 71%

66 THE PEAD PROJECT HAS 3,800 INTENDED BENEFICIARIES ??

The Lights for Learning project, Uruguay

The Elecnor Foundation, the Organisation of Latin American States (OEI) and the Administración Nacional de Usinas y Trasmisiones Eléctricas (UTE) company signed an agreement to jointly develop the Lights for Learning project in Uruguay. The aim of this initiative is to bring electricity to 82 rural schools in Uruguay, completing the electrification of all schools and improving the living and education conditions of thousands of children.



The project involves the installation of a solar power system in each of the schools, providing renewable, sustainable energy that respects the environment. These systems meet the internal and external lighting needs of the schools and also power technological and communications facilities such as TVs, computers and communications equipment.

Of the 82 rural schools supplied with solar photovoltaic equipment, 17 have subsequently been connected to the electricity grid via the rural electrification project, with another five scheduled to be connected in 2017.

At the end of 2016, the Elecnor Foundation, the OEI and UTE pledged to relocate the solar PV facilities that are no longer in use to the rural schools furthest from UTE's grids, in this way improving the resources available for children's education by bringing electricity to both schools and their homes.





66 URUGUAY IS THE FIRST COUNTRY IN LATIN AMERICA WHERE ALL RURAL SCHOOLS ARE CONNECTED TO THE POWER GRID AND HAVE INTERNET ACCESS **99**



REMOVING THE BARRIERS TO EDUCATION IN LATIN AMERICA

The Lights for Learning Uruguay initiative is part of the Iberoamerican Lights for Learning project designed to bring electricity and internet to 66,000 schools in Latin America. The project was approved at the 22nd Ibero-American Education Ministers Conference staged in Paraguay in September 2011 and originates from the "2021 Educational Goals" approved by the Heads of State and Government at the 20th XX Ibero-American Summit in 2012. In addition to Uruguay, the other countries taking part in the project are Colombia, Paraguay, El Salvador, the Dominican Republic, Peru, Panama, Costa Rica, Nicaragua, Honduras, Guatemala, Ecuador and Bolivia.

82 RURAL SCHOOLS AND MORE THAN 500 PUPILS BENEFIT

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Corporate Volunteer programme, Ghana

2016 saw the launch of the latest edition of the Elecnor Foundation's Corporate Volunteer programme. On this occasion, the beneficiary was the Solar Back-Up Systems Project in Ghana. The aim of this project, carried out in 2013, was to provide a stable electricity supply to ensure the smooth operation of facilities such as operating theatres and emergency and maternity units in six hospitals and three clinics in Ghana.

With the aim of optimising use and maintenance of the equipment, several volunteers were selected to analyse the operation of the systems and current power demand in two of the hospitals taking part in the project, Saint Xavier in Assin Fosso and Our Lady of Grace in Asikum. The volunteers collected and analysed data, simulated proposals for energy saving measures and prepared a final energy diagnostics report, which was shown to each of the hospitals. Finally, the technical measures to be implemented were selected based on the results obtained and a basic project was developed.

66 THE AIM OF THE 'BACK-UP SYSTEMS' PROJECT IS TO GUARANTEE THE POWER SUPPLY IN KEY AREAS OF 6 HOSPITALS AND 3 CLINICS IN GHANA ??





VOLUNTEERS PREPARED TO WORK FOR A BETTER WORLD

Global Corporate Volunteering (CV) is defined as "volunteering promoted by enterprises and their employees and implemented in developing areas, with a view to improving the living conditions of groups with meagre resources. These initiatives are among the best tools for enterprises to transfer their professional and technical knowledge to remote areas. They also allow enterprises to acquire first-hand knowledge of social needs while reinforcing corporate values, the development of skills, corporate sentiment, employee retention, and staff contribution to the company's CSR strategy" (from the Global Corporate Volunteering document by the Codespa Foundation and the ICEP).

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II Laboratory of Ideas on Renewable Energy



The Elecnor Foundation Renewable Energy and Energy Efficiency Chair, created in partnership with the Technical University of Madrid's Higher Technical School of Industrial Engineering, organises various activities with the aim of fostering research projects and professional meetings with sector players, establishing the major trends in the energy sector over the coming years.



One such initiative is the Laboratory of Ideas on Renewable Energy, which took place for the second time in 2016. Entitled "Changes to be made to electricity systems to satisfy the requirements of the Paris Summit", the event explored the challenges faced by the energy sector following the agreements reached at the COP 21 climate conference.

The forum was attended by Emilio Mínguez, Director of the Higher Technical School of Industrial Engineering; Luis Atienza, President of Argo Capital Partners; Juan Temboury, Managing Director of Fortia Energía; Carmen Becerril, Director of Acciona; Tomás Gómez, a professor from Comillas Pontifical University; Rafael Gómez-Elvira, Director of the Chairman's and CEO's Office of the OMIE; Guillermo Planas, General Manager of Enerfín Elecnor Renovables, and Rubén Esteller, Editor in Chief of the business daily El Economista.

THE FIRST GLOBAL DECARBONISATION ALLIANCE

The key climate summit held in Paris in December 2015, COP 21, confirmed the commitment of the vast majority of countries to tackling global warming, in the process ushering in a new energy paradigm: following the Paris Accord, the decarbonisation process is unstoppable.

Virtually all the players in the energy sector agree that generation plants which use renewable energy sources must meet most of the demand, while use of technologies that employ fossil fuels, –in particular gas,– must be limited to producing the energy required to guarantee needs are met when the supply of renewable energy fluctuates, though it is not yet clear how this will be achieved.

IV Edition of the specialist post-cycle course in medium- and low-voltage electrical installations

The Elecnor Foundation, in conjunction with the Salesianos Deusto College (Bilbao), sponsors this pioneering course in the field of professional training. The Foundation is actively involved in the design of this project and in the financing of the equipment required in the College's laboratory.

The 90-hour course is modular and is divided into theoretical and hands-on classes and a visit to Elecnor's facilities. The latest edition had 14 participants.

This course provides a great opportunity for young vocational training students of electricity distribution in the standard grade to complement their theoretical and practical training in this sphere.



A BRIDGE BETWEEN CLASSROOMS AND COMPANIES

Launched in November 2012, the specialist post-cycle course in medium- and low-voltage electrical installations is a practical contribution to the achievement of the Elecnor Foundation's aim of providing a link between training and business. In his presentation, Elecnor's then Director of Corporate Resources stated: "In launching this groundbreaking training project we have made a firm commitment because collaboration between PT and company is unfortunately not commonplace. In our view this kind of initiative, which forms part of the Elecnor Foundations activities in the field of training and research, is essential in achieving highly-trained and skilled professionals with the best professional prospects and who can help to secure a vital competitive edge."



Fostering research via the Elecnor Foundation Renewable Energy and Energy Efficiency Chair

Under the auspices of the Elecnor Foundation Renewable Energy and Energy Efficiency Chair the following three research projects were carried out in 2016:

- The objective of the first project is to optimise photovoltaic processes and it consists of an analysis of all the processes involved in the construction of a solar PV farm, from bidding through engineering, logistics and construction to maintenance.
- The second project is related to the optimisation of combined cycle power plants, with the aim of being able to replicate the thermodynamic model of a combined cycle plant and then to reproduce the results obtained in the different operation cases and to obtain theoretical backing for the conclusions obtained by the "Thermoflow" programme.
- The final project is associated with the Volunteer Programme described previously during which volunteers helped to make hospitals in Ghana more energy efficient. They analysed the current systems and energy demand in the two hospitals in question, compiled a report and, lastly, prepared a basic project featuring measures that will enable both hospitals to save energy.

OPENING UP NEW TECHNOLOGICAL HORIZONS SINCE 2013

The Elecnor Foundation Renewable Energy and Energy Efficiency Chair has been supporting research projects since 2013. It is an initiative for both professors and students of the Technical University of Madrid's Higher Technical School of Industrial Engineering. There are two pathways for the selection of projects. In the first, Elecnor makes a specific proposal and anyone with an interest at the Technical University of Madrid's Higher Technical School of Industrial Engineering with an interest and the necessary expertise is sought; in the second, a call for submissions is launched with areas of interest for Elecnor and it is the professors who propose appropriate projects. The most interesting projects are then selected and their definitive scope established.



OTHER INITIATIVES OF THE ELECNOR FOUNDATION RENEWABLE ENERGY AND ENERGY EFFICIENCY CHAIR.

A VISIT TO ELECNOR'S FACILITIES

In 2016, the Chair organised two visits to the Group's solar thermal plants in Ciudad Real

AWARD FOR THE BEST DISSERTATION PROJECT

Andrés Sebastián Herrera received the award for his project entitled "Working towards a more efficient and competitive Fresnel solar thermal technology: implementation of innovative operation strategies in an alternative plant design."

INGENIA SUBJECTS SPONSORSHIP

A 3 kW photovoltaic facility was donated for the subject "Devising an electrical system".

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Awards and scholarships programme with the School of Industrial Engineering (ETSI) of the Polytechnic University of Valencia

Elecnor entered into a collaboration agreement with the Polytechnic University of Valencia (UPV) over 20 years ago and in 2016 five students were each awarded a grant of EUR 1,800. A prize of EUR 1,500 was also awarded for the best dissertation.



Many university students on this programme have joined our workforce over the years, some of whom currently hold management positions. Support has also been provided for numerous dissertation projects, several of which have garnered awards in recognition of their high quality.



OVER 4,000 STUDENTS AND 530 TEACHERS

The School of Industrial Engineering (ETSI) of the Polytechnic University of Valencia is an institution which performs its duties as a public service for higher technical education in the industrial branch of engineering. With around 4,100 enrolled students, 534 teachers in 26 departments, 11 buildings and a built area of 45,000 m2, the School of Industrial Engineering is currently the largest of of the Polytechnic University of Valencia's Centres. The School's high international standing is illustrated by the year-on-year increase in the number of academic exchange scholarships offered, with 178 agreements in place with universities from 30 countries around the globe in the 2016-2017 academic year.

The placement of students from the Nuevo Pachacútec Higher Technological Institute in Peru at Elecnor's solar thermal plants in Ciudad Real.

With the aim of providing two students from Nuevo Pachacútec Higher Technological Institute in Peru with practical experience, the Elecnor Foundation took care of all aspects of their stay and training in areas such as occupational health and safety management, knowledge of electricity, maintenance, mechanics, etc. in the sphere of thermoelectric technology. Tourism, gastronomic and cultural activities were also organised for the students.

Their stay lasted three months and training was provided on a voluntary basis by employees of the ASTE 1A and ASTE 1B solar thermal plants.



PAVING THE WAY FOR A BETTER FUTURE FOR TALENTED YOUNG PERUVIANS

The Nuevo Pachacútec Higher Technological Institute is an education establishment created in 2004 in Ventanilla, one of the poorest districts in Peru's capital Lima, to provide opportunities for young people from disadvantaged backgrounds. Endesa (today Enel Distribución Perú) worked in partnership with the Catholic University of El Callao to create the Professional Electrical Technician course currently taught by the Institute to around 150 students. The Institute is part of the Pachacútec Foundation, which has around 1000 students in total. Cooking and administration courses are the most popular of those offered. **2008-2016**: other notable projects over these eight years of working to achieve a better world

In addition to those carried out in 2016, the Elecnor Foundation has also been involved in the following projects and activities since it was established in 2008. Maintenance work continues to be performed on most of these initiatives today, some of which have grown in scope over the years.

Social infrastructure projects

Ilumina, Honduras

The Ilumina project brought solar PV energy to several communities in the municipality of Cantarranas in the department of Francisco Morazáns in Honduras. This involved the installation of 124 photovoltaic systems in three schools, the fire station, for the ambulance service, in other community facilities and in homes. Over 13000 people have benefitted from a higher standard of living, better opportunities for economic development and greater educational opportunities thanks to artificial lighting in classrooms. It was also possible to set up a library and a toy library in the three schools in the region with the materials generously donated by Elecnor employees.



Loma Atravesada project, Dominican Republic

The Loma Atravesada initiative is the Elecnor Foundation's first social infrastructure project in the Dominican Republic, where Elecnor has been present for three decades. The project has brought power to 1,400 residents of Loma Atravesada in the municipal district of Las Galeras, who previously lacked any kind of energy infrastructure. The project involved the construction of a seven-kilometre distribution line and the installation of voltage transformers, illuminating a total of 178 homes and the municipal church, the most important community space in the municipality.

Sinergia project, Chile

The Sinergia Project in the village of Totoral (in the Atacama Desert), the result of a partnership with Chile's Institute of Agricultural Development (INDAP), part of the Ministry of Agriculture, was developed with the aim of bringing water and power to this community, benefitting some 40 families The Sinergia Project is unique as it combines water and solar energy, hence its name, Sinergia, or synergy, reflecting how these two elements can produce greater results when used together than when used on their own.



Ronald McDonald House in Madrid, Spain

The Elecnor Foundation is involved in its first social infrastructure project in Spain in conjunction with the Ronald McDonald Children's Foundation. The aim of this initiative is to provide accommodation for the families of hospitalised children close to where they are being treated. Elecnor was selected to build the Madrid Ronald McDonald House, the largest in the country at 3,000 m², on a turnkey basis in the grounds of the Niño Jesús Children's Hospital. The Elecnor Foundation - which has a representative on the Board of the House - was responsible for the energy efficiency features that will enable overall energy savings of around 46.5% to be achieved compared with conventional facilities and a reduction in CO_2 emissions of 52.45 tonnes.





Training and research projects





Sustainability, CSR and social innovation

The Elecnor Foundation and the Deusto Business School have a cooperation agreement to launch and jointly develop forums and training activities relating to sustainability, corporate social responsibility and social innovation. The agreement came into effect in 2014 at the inaugural Deusto Business School - Elecnor Foundation Dialogue Forum, a gathering of international experts in corporate social responsibility, creating value and business internationalisation.

