



**THE**  
**LIVING ENERGY**  
**BOOK**

by *edp*



SPAIN  
SUSTAINABILITY REPORT  
2017







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We are energy on the road we go through every day – an energy that is transformed, reinvented and shaped in different forms.

An energy that lives inside us, that is a universal language, that gets us moving and that takes us far.

A living energy that brings us closer, that innovates and with which we, together and through little gestures, create change.

The energy that lives inside every one of us is transmitted and is everywhere – in a hug, when we switch on a lamp, in our homes, in the streets and even around the corner.

A living energy we keep writing together, in a book which shows the present but also lays the foundations for the future.

*The Living Energy Book.*

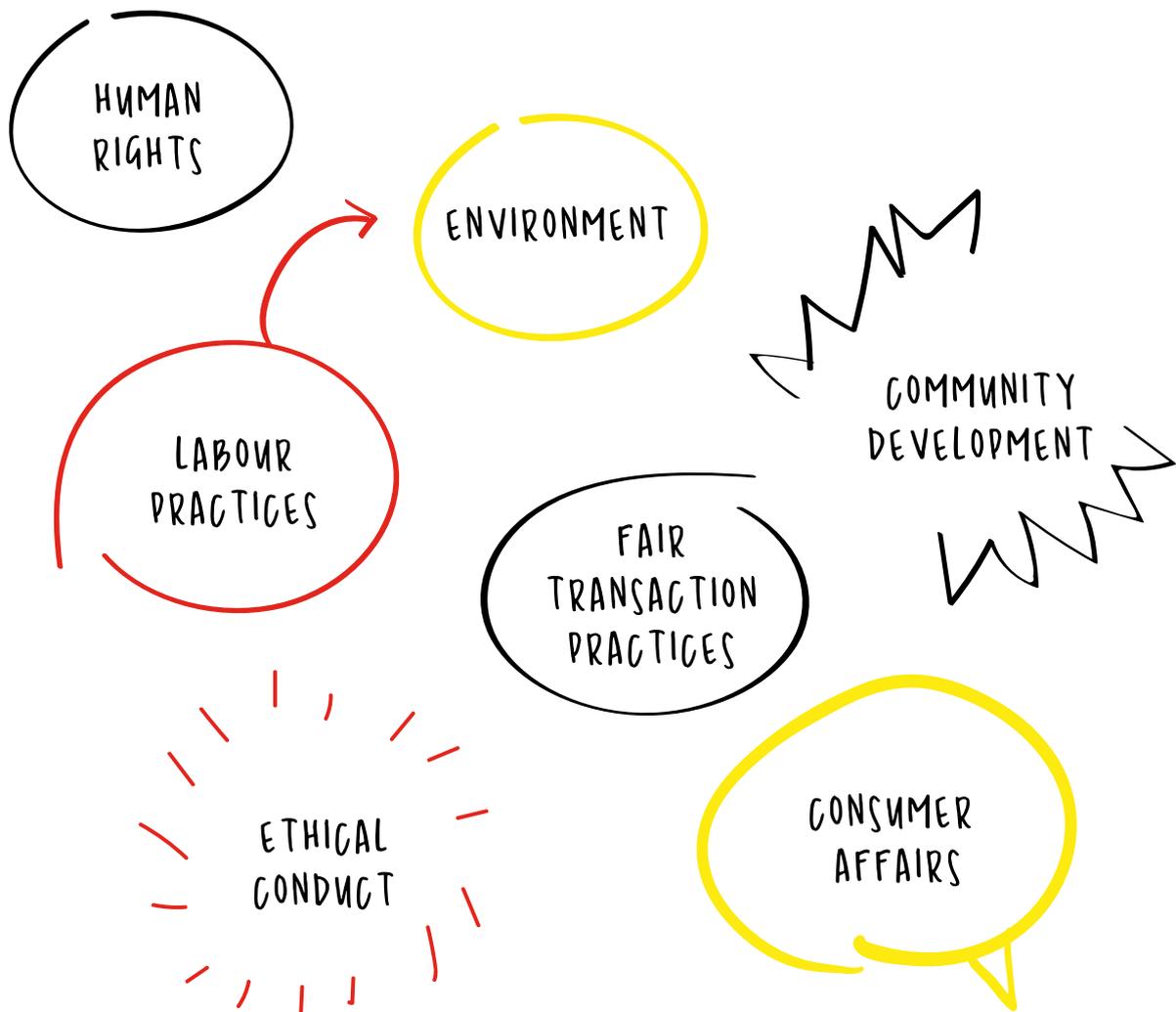


# **THIS REPORT**

EDP is a global company with a strategy that integrates social responsibility, including social and environmental considerations in the decision-taking process and identifying the relevant matters for the stakeholders.

In this sustainability report, we will go through the fundamental social responsibility matters, with regard to those topics that have been selected in the materiality study, highlighting the most important actions in financial year 2017.

Each chapter of the "Performance" section will address each of the fundamental social responsibility matters:

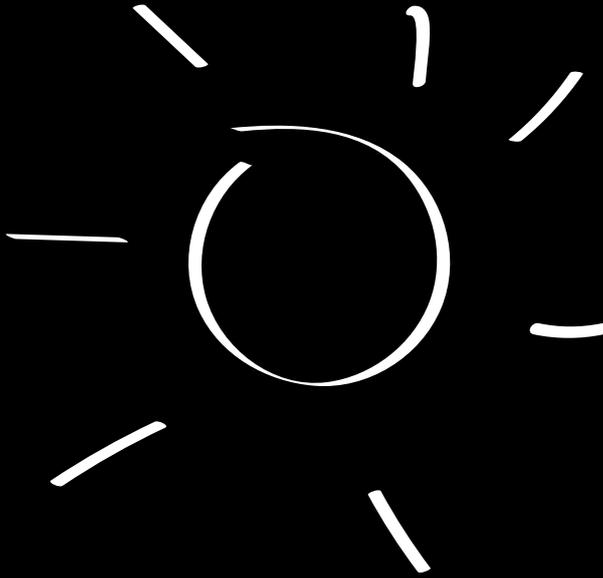




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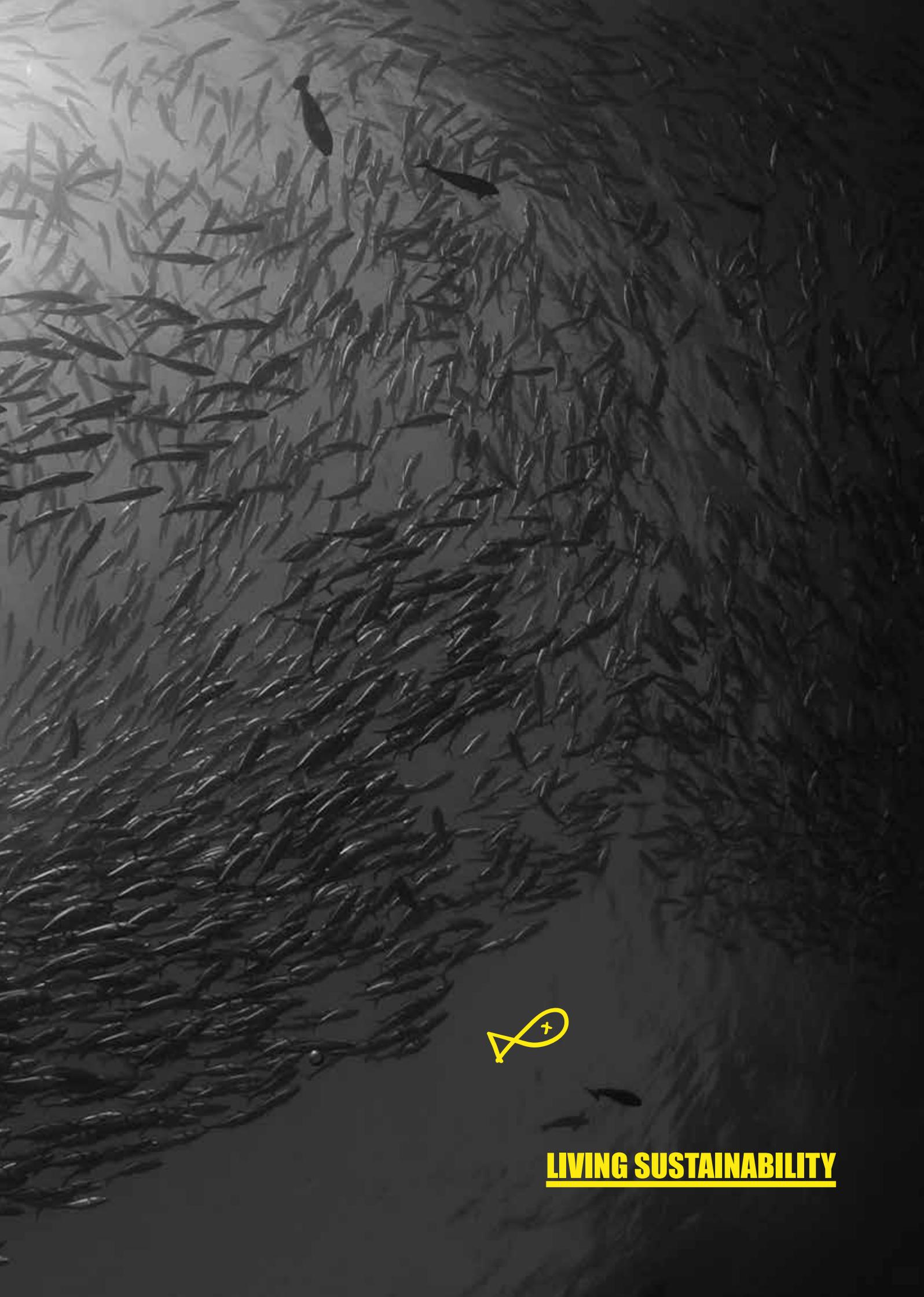




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**LIVING SUSTAINABILITY**

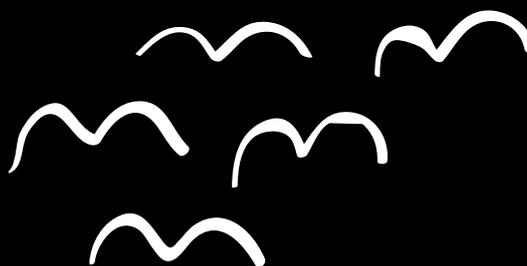


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# 01

## EDP ESPAÑA

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MANUEL MENÉNDEZ MENÉNDEZ  
CHAIRMAN



### 1.1.1. LETTER FROM THE CHAIRMAN

Last September, I had the pleasure to host the inauguration of the Spanish Energy Club conference on “the transition to a more sustainable energy model”. In such conference, representatives from the public Administration and from the main energy companies talked about energy as the driving force for economic development and human growth, but with a clear environmental impact that must be mitigated – CO<sub>2</sub> emissions. This is the reason why energy and the energy sector hold, and will continue to do so, a prominent place in the world, European and Spanish political agenda, with a road map defined in the Paris Agreement.

In order to progress in the decarbonisation of the sector, it is essential to boost more competitive and mature technologies, together with the commitment to energy efficiency as a key aspect to be developed during this transition of the model. Efficiency not only is an affordable solution to achieve these goals, but also entails additional benefits such as the contribution to the security of supply and the increase of competitiveness.

A safer, more competitive and sustainable energy model involves the electrification of the demand and, in this scenario, generation plants provide backup capacity, distribution takes a more active role and the customers’ capacity to interact with the system is increased until they play a leading role in the transformation of the current energy model.

Thus, *EDP España* is provided with a balanced production mix and has completed a wide environmental investment portfolio to guarantee its operation. As for distribution, the digitisation of assets has enabled us to have better controlled and optimised facilities and, in marketing terms, the data and the customer communication tools allow us

to adjust the business and develop offers and personalised services.

This entire transition also takes place within the sustainability framework. In 2017, *EDP España* has added to its commitment to the Global Compact Principles its participation in the United Nations Sustainable Development Goals: equality, affordable energy, decent employment, responsible use, climate change, environment, innovation and more sustainable cities are key aspects for society and, consequently, they must be fundamental issues in the new energy model.

Through this Sustainability Report, I would like to invite you to learn how we are facing these challenges in *EDP España*.

On behalf of the Board of Directors which I chair, I wish to stand out and thank the more than 1,200 people who work at *EDP España* for their collaboration, without the dedication of whom we could not move forward in this transition.

Finally, I would like to thank the General Supervisory Board and the Executive Board of Directors of the Group for their trust and their support for the development of the company in Spain.

Manuel Menéndez Menéndez  
Chairman



MIGUEL STILWELL D'ANDRADE  
CEO



### 1.1.2. LETTER FROM THE CEO

In this Sustainability Report, I would like to invite you to learn about the changes and projects the company is facing today, 100 years after we began our activity in the Principality of Asturias. In September 2017, we commemorated together with H. M. the King Felipe VI the inauguration of the first Hydro Power Plant of the company, La Malva Plant, which was the origin of the company Saltos de Somiedo, subsequently named Hidroeléctrica del Cantábrico, and which, as a current member of the EDP group, has preserved its essence and keeps operating at full capacity.

EDP is committed to the generation assets in Spain, which has been materialised this year with the investments in denitrification projects and in the new natural gas starting system in conventional thermal generation. Behind these projects, EDP has invested more than 200 million Euros in the last decade in environmental improvements in its power plants, which allows to operate them in compliance with the most demanding environmental standards applicable, along with high availability and flexibility in the service of the electricity system.

In electricity distribution, the implementation of smart meters has reached 94% in 2017, being its conclusion expected in April, 8 months before the planned period. This level of asset digitisation sets up a grid ready for the future which, along with the InovGrid project, allows us to solve incidents faster. The improvement in the location of medium-voltage failures allows us to make profits in the TIEPI (Equivalent Interruption Time), which in 2017 has reached an historical 20-minute record.

The marketing strategy has led us to obtain more than 1.13 million electricity contracts, 0.88 million gas contracts and 0.59 million Funciona contracts, being leaders in the satisfaction and quality of the different customer care channels and the launch of a positioning campaign in the media. We are working on "customer-by-customer" personalisation and the Reconquista project will facilitate the development of new commercial products in a nimble and quick way, through cross-section work teams, letting us being a benchmark in digital relationship with customers.

But let us not forget that our business is a matter of people, of how people work and interact with each other. In this context, we have conceived the Agora project, which aims to adapt the work spaces in the corporate headquarters of *EDP España* to the new work trends and the negotiation of a new Collective Bargaining Agreement. Likewise, *EDP España* keeps working on the zero-accident commitment

and on becoming a more and more healthy company.

We are working on the continuous improvement in the organisation with the Lean programme, which is assuming an increasingly integrating role. This way, we have added to the Lean Iberian Programme for Generation the Iberian programme for continuous improvement in the retailer area approved in September. And for major breakthroughs, the Innovation area is collaborating, through EDP Starter, with more than 200 innovation companies in new possibilities to develop projects in all the strategic R&D&i lines of the Group.

We cannot fail to mention our commitment to Sustainability, continuously present in all our activities, which is being strengthened through the environmental certification of the implemented management systems, our dialogue initiatives with suppliers, the local community and NGOs, or our collaboration with the EDP Foundation through social-impact programmes, such as *EDP Solidaria* and *Energía Solidaria* programmes. We are working on a new Sustainability Plan to control the impact of the company's decisions and activities on society and on the environment, which will also support the development of the Social Investment Policy and our commitment to the Sustainable Development Goals.

In the future, challenges and opportunities are materialised in a triple-'D' strategy: Decarbonisation, involving a balanced generation mix with backup capacity; Decentralisation, involving grids prepared to manage the incorporation of new agents and the deployment of the electric car; and Digitisation, involving the EDP X project which aims to get ahead of the main digital challenges that may potentially affect the company.

Finally, I would like to emphasise that I am proud of having been CEO of *EDP España* over these past 6 years and I wish to thank the entire professional and human team who have accompanied me for their efforts, rigour and dedication, without which these results would have not been possible, as well as the support of the entire Board of Directors, with whom it has been a pleasure to work throughout these years.

Miguel Stilwell d'Andrade  
CEO

# 1.2. EDP ESPAÑA'S PROFILE

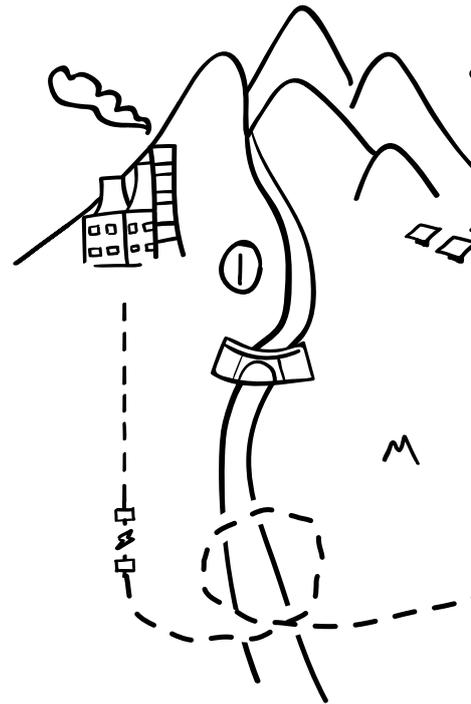
## 1.2.1. WHO ARE WE

### EDP IS A VERTICALLY INTEGRATED ENERGY COMPANY

EDP España is the Spanish subsidiary of the Portuguese multinational EDP, world leader in the energy sector and one of the main operators in the Iberian Peninsula, present in 14 countries and 4 continents.

EDP España has reached in 2017 100 years of history. On 22 September 2017, H. M. the King Felipe VI presided over the ceremony commemorating the centennial of La Malva hydro power plant, in Somiedo, the first significant electricity generation plant in Asturias and origin of the company Saltos de Somiedo, subsequently named Hidroeléctrica del Cantábrico, and, since October 2017, EDP España, S.A.U.

EDP has around 12,000 employees, out of which 1,280 belong to EDP España, and is present in the entire electricity value chain and in the gas retailer activity.

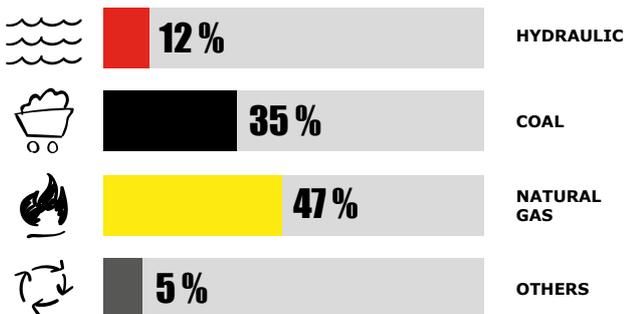


The **generation activity** is the first activity in the electricity sector. Electricity is generated from renewable or non-renewable energy sources.

Investments in wind and solar energy are made through EDP Renewables.

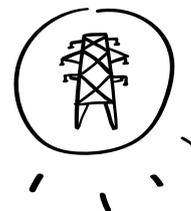
The energy produced through traditional sources mostly comes from coal, natural gas, nuclear energy and cogeneration. In the case of renewable sources, it comes essentially from water, wind and sun. The energy produced is sold to the **wholesale market**.

#### 3,627 MW INSTALLED CAPACITY

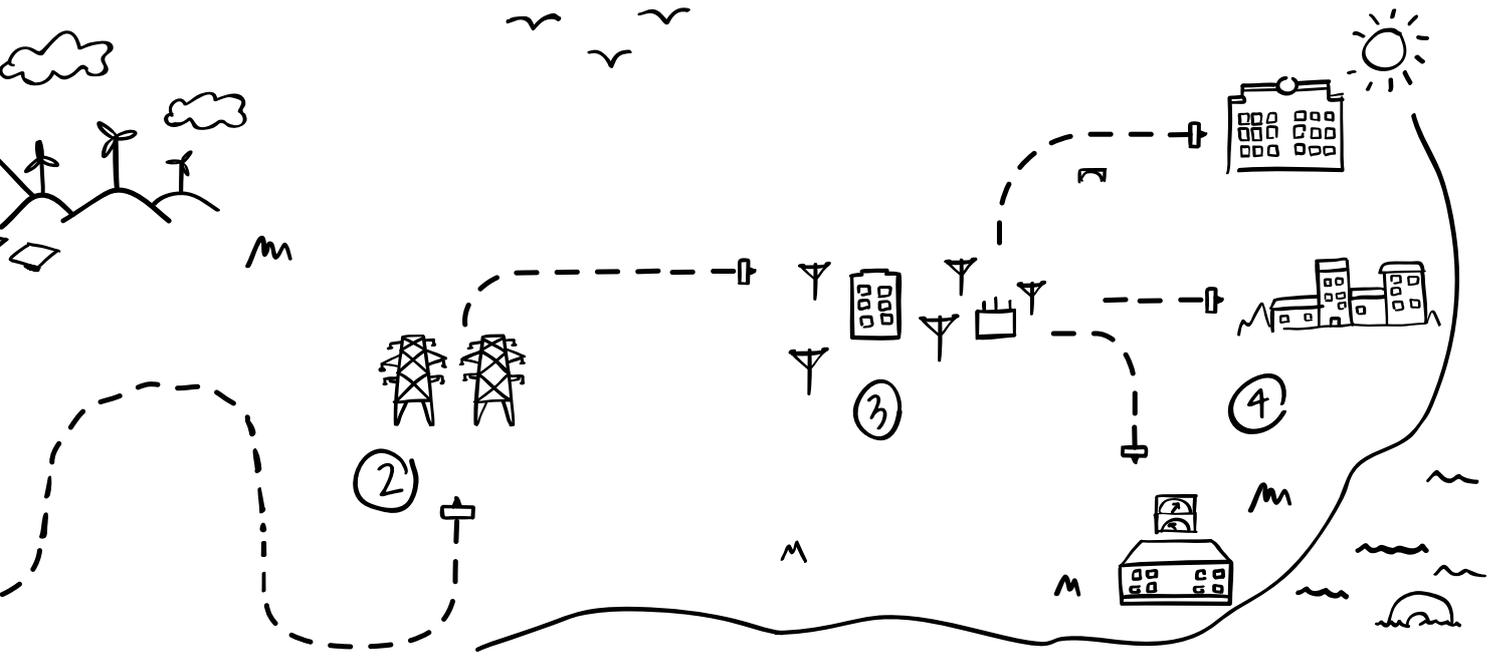


In the **transmission activity** the owners of the grids allow the passage of the produced energy. The energy transmission grids are comprised by high-voltage power lines which subsequently channel energy to the distribution grids. EDP España has no transmission assets.

In Spain, the transmission activity is carried out by Red Eléctrica de España (REE).



#### 11,344 GWh NET ELECTRICITY PRODUCED



③

In the **distribution activity** the owners of the grids allow energy to be channelled to the supply points. The electricity distribution grids are comprised by high-, medium- and low-voltage lines. They are also an integral part of substations and transformation centres.

④

The **retailer activity** includes the purchase of energy in the wholesale market, the payment of tolls or access tariffs for using transmission and distribution grids and the sale of electricity and gas to the end consumer.

**20,613 KM OF LINES**

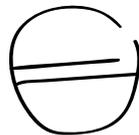
**15,695** Km

of overhead lines



**4,918** Km

of underground lines



**9,331 GWh OF DISTRIBUTED ENERGY**

**1,133,489 ELECTRICITY CUSTOMERS**

Free-market customers **914,329** supply points



Last-resort customers **219,160** supply points



**883,200 GAS CUSTOMERS**

Free-market customers **831,460** supply points



Last-resort customers **51,740** supply points



# 1.2.2. WHERE ARE WE



Generation



Renewables



Transmission



Distribution



Retail

Canada   5

EE.UU.   410

Mexico   7

Brazil      2,961





Portugal 🌊 ⚙️ ⚡ 🌱 👤 6,537

Spain 🌊 ⚙️ ⚡ 🌱 👤 1,686

EDP España 1,280  
EDP Renewables 406

Poland ⚙️ 👤 38

Romania ⚙️ 👤 32

Italy ⚙️ 👤 23

United Kingdom ⚙️ 👤 34

Belgium ⚙️ 👤 2

France ⚙️ 👤 53



# 1.2.3. VISION, VALUES AND COMMITMENTS

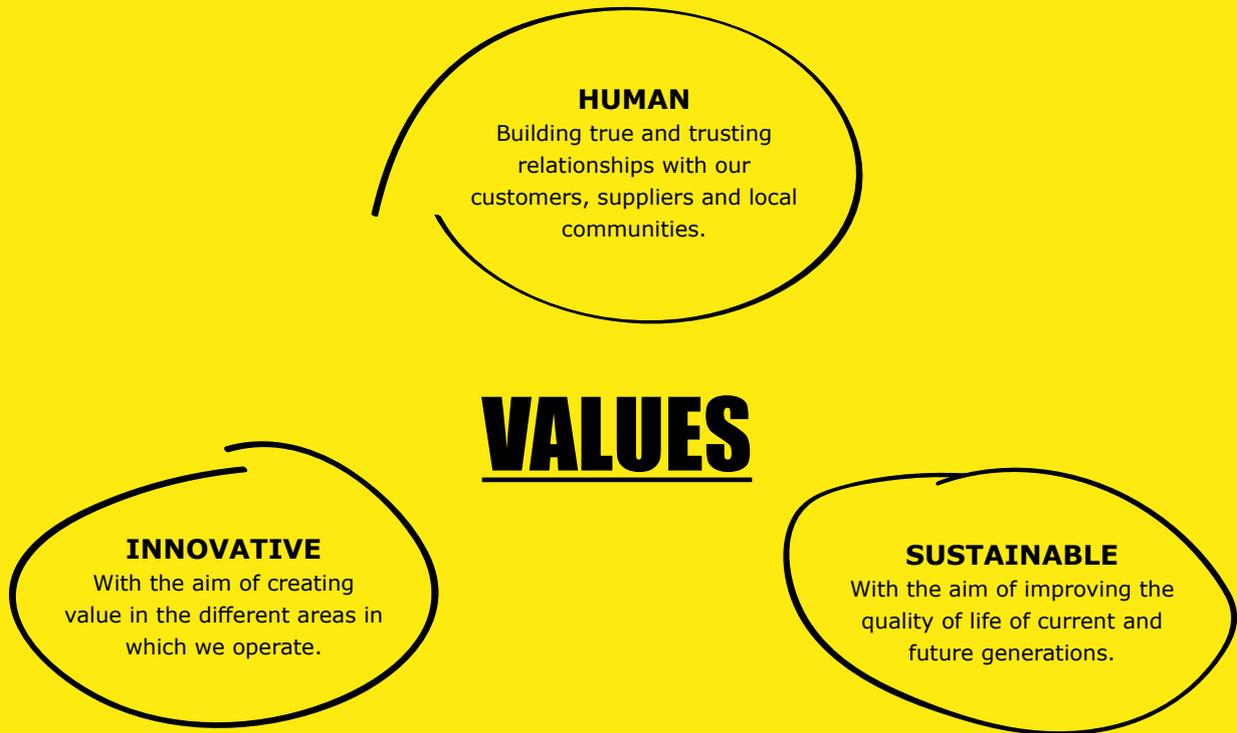


# VISION

A global energy company,  
leader in the creation of  
value, innovation and  
sustainability

*edp*





# **COMMITMENTS**

## **RESULTS**

- We meet the commitments given to our shareholders.
- We are leaders thanks to our anticipation and execution capacity.
- We demand excellence in everything we undertake.

## **CUSTOMERS**

- We put ourselves in our customers' shoes whenever we take a decision.
- We listen to our customers and reply them in a simple and transparent way.
- We surprise our customers, getting ahead of their needs.

## **PEOPLE**

- We combine ethical conduct and professional rigour with enthusiasm and initiative, fostering team work.
- We promote the development of abilities and merits.
- We believe that balance between personal and professional life is essential to succeed.

## **SUSTAINABILITY**

- We assume the social responsibility resulted from our activity, contributing to the development of the communities in which we are present.
- We sustainably reduce specific greenhouse gas emissions resulting from the energy we produce.
- We actively promote energy efficiency.



La Malva

15-33



100  
YEARS OF HISTORY



FIRST SIGNIFICANT  
ELECTRICITY GENERATION  
PLANT IN ASTURIAS

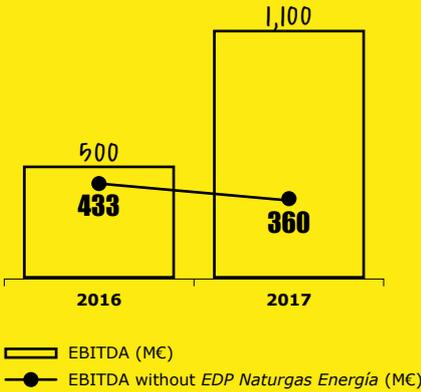


# 1.3. OUR YEAR

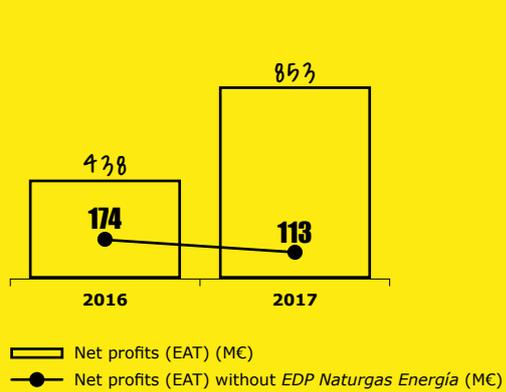
## 1.3.1. MAIN INDICATORS

### FINANCIAL DATA

#### EBITDA



#### NET PROFITS



### OPERATIONAL DATA

#### GENERATION

**3,627** MW 0% vs 2016  
 Installed power

**11,344** GWh +25% vs 2016  
 Net production

#### DISTRIBUTION

**9,331** GWh +2% vs 2016  
 Distributed energy

**664,099** 0% vs 2016  
 Supply points connected to our grid

#### RETAILER

**14,003** GWh -16% vs 2016  
 Retailed electricity

**1,133,489** +6% vs 2016  
 Electricity customers (supply points)

**14,820** GWh -22% vs 2016  
 Retailed gas

**883,200** +4% vs 2016  
 Gas customers (supply points)

# A COMPANY...



## PEOPLE



**1,280** -16 % vs 2016  
No. of employees

**14** % -1 p.p vs 2016  
Women in management positions with respect to the total collaborators in management positions

**33** h/e +2 vs 2016  
No. of training hours/employee

**6** +1 vs 2016  
No. of own accidents

## CUSTOMERS AND SUPPLIERS



**375,771** +17 % vs 2016  
Customers with electronic invoice

**6** GWh 0 % vs 2016  
GWh saved by customers in energy efficiency services

**71** % +3 % vs 2016  
Customer satisfaction

**26** +10 vs 2016  
No. of accidents in services with suppliers



**COMMUNITY**



... WHICH PAYS ATTENTION TO THE LOCAL COMMUNITIES' EXPECTATIONS

**560,000** +40 % vs 2016

€ allocated to *EDP Solidaria* programme

**174,000** +20 % vs 2016

€ allocated to the *Energía Solidaria* programme

**257** -19 % vs 2016

Scholarships and students

**144**

Interviews to stakeholders conducted

**INNOVACIÓN**

... MORE DIGITAL

**359,301** -0,8 % vs 2016

€ investment in R&D&i

**608,897** 94 % of the total

No. of smart meters installed

**6,622** h -19 % vs 2016

No. of hours of video conference use



**PLANET**



... MORE SUSTAINABLE FOR THE ENVIRONMENT

**589** +15 % vs 2016

t/GWh of specific CO<sub>2</sub> emissions

**74** % 4 p.p vs 2016

Recovered waste and by-products

**100** % 0 p.p vs 2016

Certified installed power

**99** % +1 p.p vs 2016

% Recovered water out of abstracted water



## 1.3.2. MAIN EVENTS

16 FEB

Launch of EDP Starter Acceleration Program for the 1<sup>st</sup> time in Spain

23 MARCH

Award-giving ceremony of EDP Spain Environmental and Prevention Awards

12 MAY

EDP's commitment to the United Nations Sustainable Development Goals

29 JUNE

2<sup>nd</sup> balance of the LEAN programme for Iberian Generation in Pola de Somiedo

21 JUL

Setting-up of the denitrification plant in Soto G3

26 JUL

Public statement made by the Board of Directors on the respect of Human Rights

27 JUL

Conclusion of the sale of 100% of EDP Gas Distribution

1 SEP

Setting-up of the *EDP es Conciliación* (in English: EDP is Work-Personal Life Balance) programme

18 SEP

Approval of the Iberian programme for continuous improvement in the retail area

22 SEP

King Felipe VI visits La Malva on the occasion of its centennial

23 OCT

Change of the parent company's corporate name to *EDP España*, S.A.U.

26 OCT-3 NOV

EDP seminar in the Mining, Energy and Material Engineering School of the University of Oviedo

6 NOV

Launch of *Máximo Ahorro* (in English: Maximun Savings) offer for customers

18-26 NOV

EDP collaborates with the 7<sup>th</sup> European Week for Waste Reduction

20 DEC

EDP reaches an agreement with a service station for arranging the first fast charging station for electric cars in eastern Asturias

# **AWARDS**

DOUBLE RECOGNITION IN  
THE CRC AWARDS

GOLD TO THE BEST  
TELEMARKETING SERVICE  
AND TO THE BEST ONSITE  
CUSTOMER CARE

**ACHIEVEMENT OF  
THE ASTURIAS  
CERTIFICATION FOR  
SAFE MOBILITY IN THE  
COMPANY**

**No.1**  
**IN THE WORLD OF**  
**INTEGRATED UTILITIES**

WITH THE HIGHEST RANKING IN  
ITS HISTORY IN THE DOW JONES  
SUSTAINABILITY INDEX

EDP ESPAÑA LEADS  
THE STIGA CONSUMER  
SATISFACTION INDEX  
(ISCX)

**LEADER**

IN QUALITY OF THE  
SUPPLY WITH THE BEST  
TIEPI IN HISTORY  
(20 MINUTES)

**ASOCAS AWARD  
FOR INDUSTRIAL  
SAFETY**

FOR THE EFFORT MADE BY  
EDP IN FITTING OUT THE  
OLD INSTALLATIONS TO THE  
NEW INDUSTRIAL SAFETY  
STANDARDS

*edp*





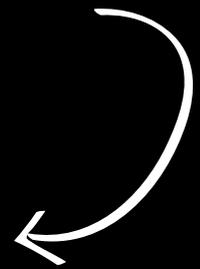
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# 02

## CONTEXT

### **2.1. ENERGY GLOBAL TRENDS 33**

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# **O2 CONTEXT**

## **2.1. ENERGY GLOBAL TRENDS**

Energy global trends revolve around:



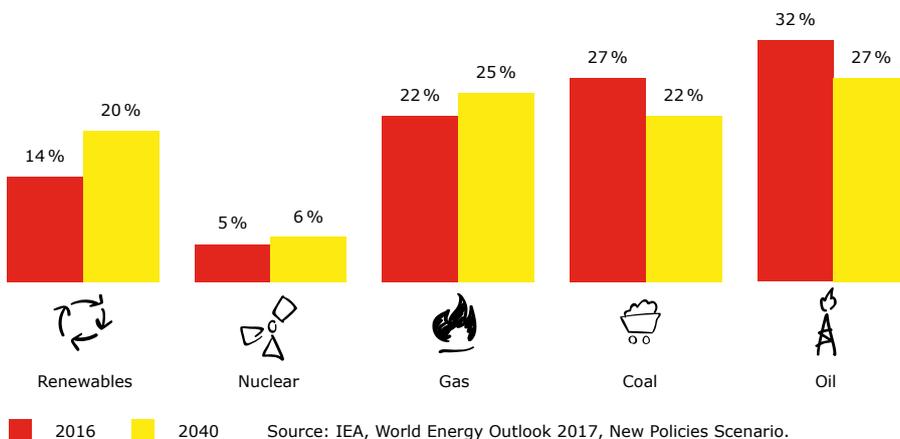
### **2.1.1. A DECARBONISING WORLD**

Decarbonisation is still one of the main issues on the global agenda – emissions remain stable for the third year in a row. However, stagnation in emissions is not enough to meet the target set in the Paris Agreement (December 2015). The aim of the Paris Agreement is to prevent the increase of the planet’s global average temperature from exceeding 2°C with respect to pre-industrial levels. The Agreement also seeks to promote additional efforts to prevent global warming from exceeding 1.5°C. For this to happen, all countries will have to reach the peak of their emissions and do their best to reduce them over the following periods. The EU aims to cut greenhouse gas emissions to 80% with respect to 1990 levels by 2050.

The speed of increase of the global demand for energy will slow down compared to the historical rate, but the International Energy Agency (IEA) estimates that the global demand for energy will increase by 30% up to 2040, which is equivalent to a 1% annual increase. This increase arises from the 3.4% annual growth of global economy and the population surge to more than 9 billion by 2040. At the same time, CO<sub>2</sub> emissions related to the energy sector are expected to increase only by 0.4% annually, thus improving the level of global emissions.

Although global CO<sub>2</sub> emissions are expected to decrease in the long term, the increase in the demand for energy remains a concern due to its climate impact, since it hinders the compliance with the goals set forth in the Paris Agreement.

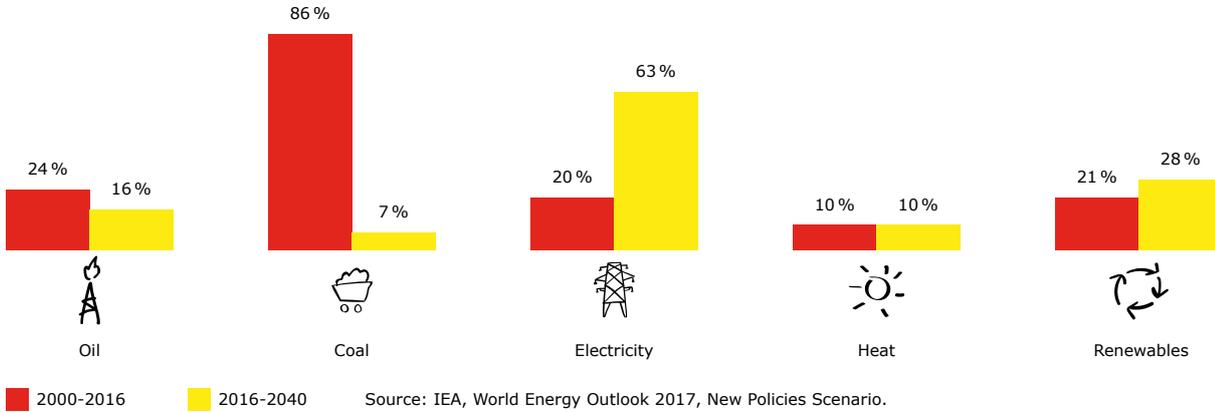
### **PRIMARY ENERGY SOURCES IN THE WORLD**



The road to decarbonisation involves: a drastic change in the economic model based on fossil fuels; a strong commitment to energy efficiency; electrification based on renewables and the promotion of innovation.

In order to achieve these goals, the importance of fossil fuels in the global energy mix must be progressively reduced until each of the three fossil fuels (oil, coal and natural gas) represent approximately 1/4 of the primary energy consumption by 2040. Renewables and nuclear energy represent the rest, contributing 20% and 6%, respectively.

**GROWTH BY FINAL ENERGY SOURCE**



As for final energy, the consumption of electricity is the one which will experience a greater growth by 2040.

**2.1.2. 2.1.2. INCREASING ELECTRIFICATION OF CONSUMPTION**

**ELECTRICITY  
CONSUMPTION**

Currently, the weight of electricity does not exceed 20% and it could reach 60% in 2040. Almost half of this growth projected for 2040 will be concentrated in China and India.

From a sectorial perspective, the global increase in the electricity demand will be mainly due to the industry. Other forms of energy that have been traditionally used to meet industrial consumption needs (thermal demand and refrigeration) and in transport will be progressively replaced by more efficient, competitive and less polluting technologies, especially heat pumps and mobility solutions based on electrical technologies.

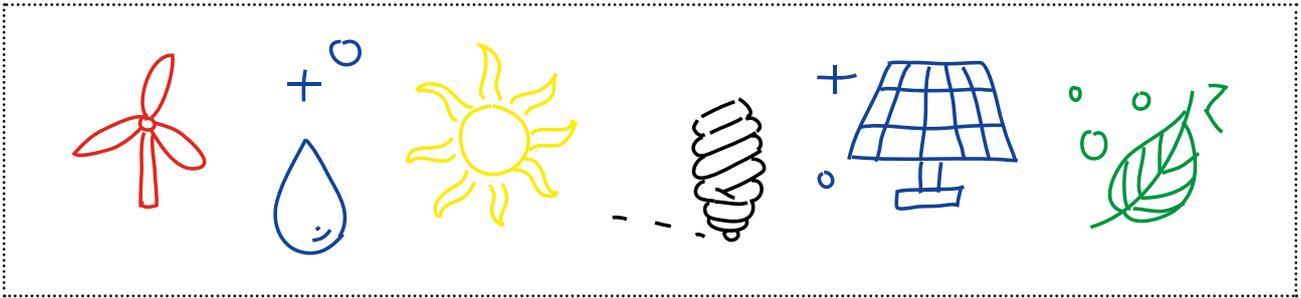
**RENEWABLES**

Technological development and the consequent reduction in the cost of renewables is the driving force behind these technologies (mainly wind and photovoltaic solar), also boosted by a set of policies based on environmental concerns and on reducing external dependence (the particular case of Europe).

The strong penetration of renewables in the energy mix has given rise to consequences at various levels. Their intermittent nature entails additional challenges in the management of electrical systems and in the backup capacity needs to guarantee the security of supply.

Up to 2040, the installed capacity is expected to increase on a global level. The IEA estimates that this will require major investments, more than a half of which will be allocated to generation, and the rest will be distributed between transmission and distribution infrastructures. Out of this investment in new capacity, it is estimated that about two thirds will be allocated to renewables, given the growing competitiveness of these technologies.





**2.1.3. DIGITISATION AND INNOVATION IN THE SECTOR**

**DIGITISATION OF THE ENERGY SECTOR**

The whole value chain is experiencing a growing digitisation in the **energy sector**. Regarding the supply, it is estimated that digitisation results in savings up to 20% in production costs as regards generation and in the implementation of smart grids and meters.



As for the demand, the growing digitisation allows consumers to participate more actively.

**SMART GRIDS**

Smart grids enable to monitor electricity flows and adjust the deviations between supply and demand. Bloomberg estimates that the digitisation of the electricity sector will generate almost 40 billion dollars in 2025, half of that value being generated by the use of smart meters.

**DISTRIBUTED GENERATION**

Distributed generation allows consumers to install and operate their own energy production systems, such as solar panels. Nowadays, the solar panels available in the market operate with a 20-23% efficiency. However, next-generation solar technology may reach an efficiency of 46%. Technical developments will allow solar energy to be integrated into more devices and surfaces.



**ELECTRICAL MOBILITY**



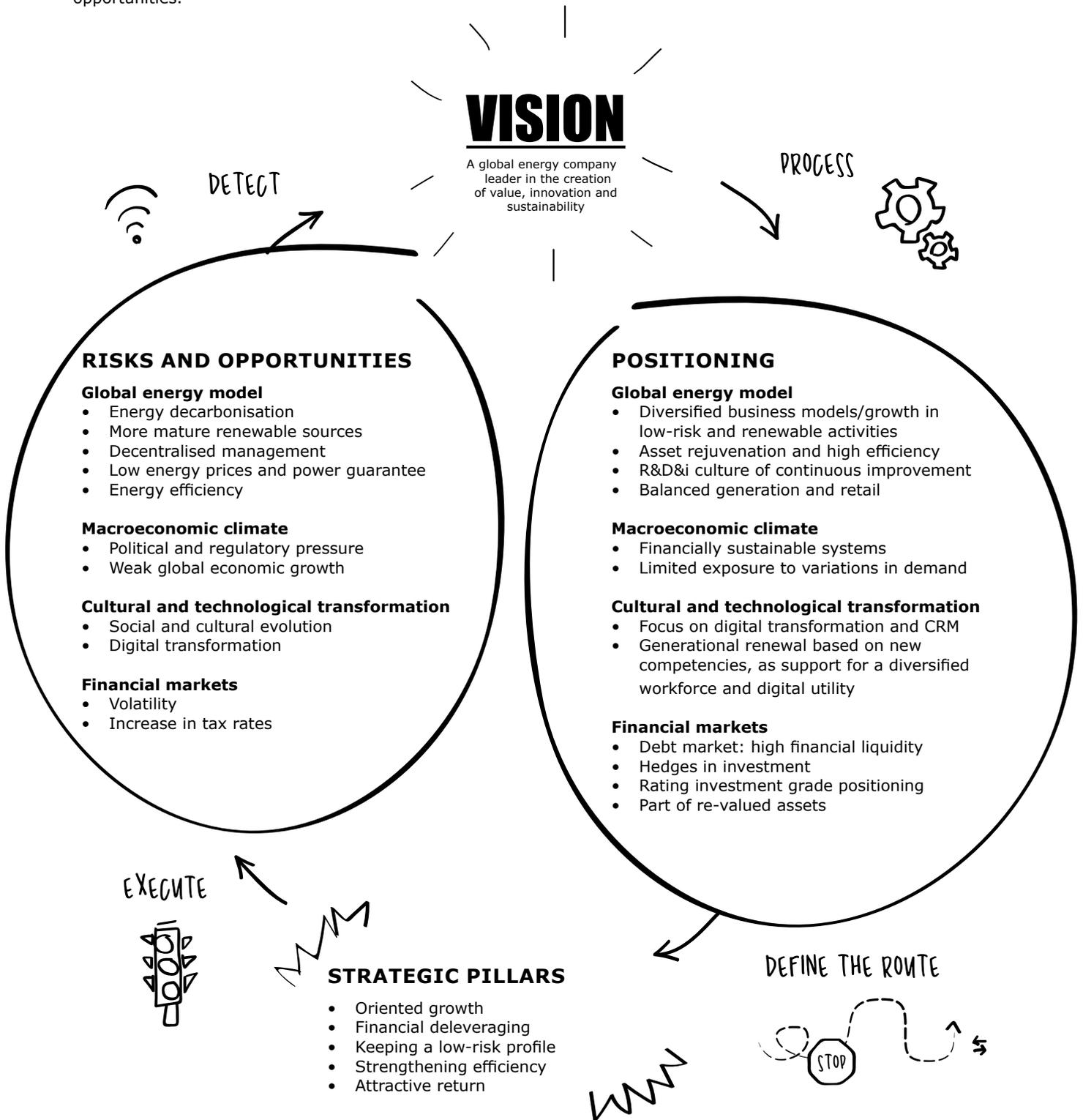
As regards the **transport sector**, the continuous reduction in the cost of electric vehicle (EV) batteries, together with recent regulatory policies, will foster their implementation. Year 2017 was marked by the electrification goals announced by various car manufacturers and governments.

According to the IEA, in 2040 the EV share will reach 14% of the total fleet of vehicles, compared to the current 0.2%.

## 2.2. STRATEGIC PRIORITIES

These past years have brought significant challenges to the energy sector, related not only to the current energy revolution but also to changes in the companies' processes and human capital derived from the already started digital and cultural leap.

These factors result in uncertainty and volatility in the sector, thus entailing a proactive management of risks and opportunities.





## STRATEGIC LINES

EDP España is prepared for this energy transition thanks to its 2016-2020 Strategy.



Some of the most relevant actions linked to the degree of compliance with each strategic line are outlined below, although the actions carried out in 2017 are detailed in depth throughout the different chapters of this report.

### GENERATION

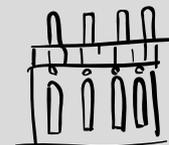
#### Operational flexibility and high availability of production centres

**EDP is committed to the digitisation of the operation and maintenance of their electricity production assets**

**MIGUEL MATEOS VALLES**  
Generation Director

“The highlight of 2017 in the generation activity was the celebration of the Centennial of La Malva Hydro Power Plant, which took place on 22 September and was presided over by the King of Spain, Felipe VI. This event paid tribute to all the collaborators of Hidroeléctrica del Cantábrico, currently *EDP España*, who have devoted their knowledge and efforts, for more than one hundred years, to the operation of a plant that has played a key role in the industrial development of Asturias. Furthermore, its facilities have been adapted, mostly by the workers themselves, which has allowed the company to be open to society, combining its production activity with a cultural function.

CENTENNIAL



La Malva

Two aspects of this event should be mentioned. Firstly, the fact that La Malva Plant is located within the Natural Reserve of Somiedo, which shows that you can carry out an industrial activity within a protected environment. And secondly, the excellent maintenance condition of the facilities, which one hundred years later prove the quality of the work performed by those who operated it and maintained it over these years”.

**Other highlights of 2017:**

- 2017 has been an extremely dry year, with the lowest hydraulic production in *EDP España* since 1994, which has been 19% lower than the previous minimum record, thus involving an increase in the use of our coal and combined-cycle plants.
- Start-up of the denitrification plant of Soto 3, which has significantly reduced its nitrogen oxide emissions.
- Normal operation without incidents in Aboño 2, despite it was operated without the drive wheel of the high pressure turbine, after the provisional repair performed in October 2016.
- EDP Spain’s participation in EDP’s Monitorisation and Diagnosis Centre Project, which will allow optimising the operation and maintenance of all EDP generation plants, regardless of their technology and geographical location.

**Denitrification projects in Aboño 2 and Soto 3**

**MARCOS ANTUÑA EGOICHEAGA**  
**New Business and Projects Director**

"As regards EDP's generation strategy consisting in focusing on the availability and flexibility of our plants, in the second semester of 2017, we started a study on the technical-economic viability of converting the thermal group Aboño 1 from coal to furnace gas and adapting it to meet the emission limits established by EU Directive 2010/75 on Industrial Emissions and the BREF 2017.

The study includes adapting the boiler to burn furnace gas with the minimum required natural gas support, under acceptable conditions of efficiency and compliance with the emission limits. The studies carried out in 2009 concerning the remaining life of the boiler and the rest of the Aboño 1 plant are also being updated in order to reach a life span of 15 years.

In 2017, a HUNOSA and EDP mixed team carried out a viability study on the construction of pumped storage hydro power plants using mine water from underground mines flooded in the post-closure procedure. The study will be updated according to the development of the electricity market conditions".



**ELECTRICITY DISTRIBUTION**

*Service quality and operational efficiency*

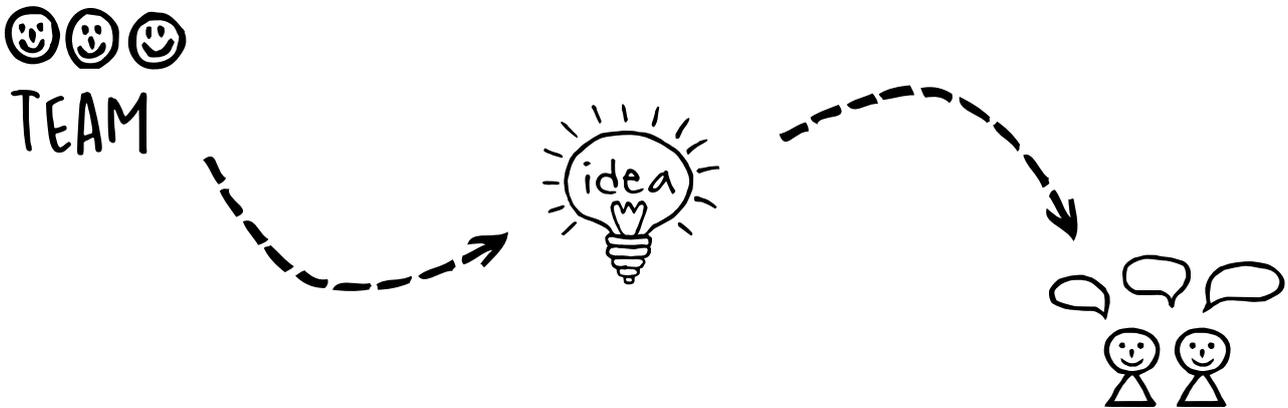
**LUIS ÁLVAREZ ARIAS DE VELASCO**  
**Electricity Distribution Director**

"EDP remains the leader in supply quality. We finished 2017 with a new TIEPI (Equivalent Interruption Time) record of 20 minutes. This result is possible thanks to the high level of specialisation of the employees that operate and maintain the grid, the investing effort made over the past years and the transformation of the traditional operation of the grid into a digitised grid.

The digital operation of the grid has its origin in the replacement of mechanical meters by electronic meters featuring the time-scheduled registration of consumption. The management of all this information together with the integration of the LV grid into our Scada system and the development of applications to monitor the grid are the cornerstones of digital operation. We have finished the year with a 94% renewal of our meter stock and we will reach 100% in the first quarter of 2018.

In 2017 we have also launched pilot projects which will allow us to extend the digitisation of distribution to other fields, for example: using drones to supervise the maintenance of medium- and high-voltage overhead lines; using augmented reality glasses for the maintenance of line positions in substations and distribution centres; the SIMBO project which will allow us to break down losses by voltage level; the mobility project and other initiatives, some of which we intend to implement during 2018".





**RETAILER**

*Optimisation of the retailer activity and creation of customer loyalty*

**FRANCISCO JAVIER SÁENZ DE JUBERA**  
**Board Member and General Manager**

“The customer is always at the heart of everything we do in EDP’s commercial strategy. Our results prove that this philosophy is continuously and sustainably attracting new gas and electricity customers. According to the quarterly reports on the development of the retail market published by the National Commission on Markets and Competition (CNMC, in Spanish), EDP is the only company that features a steady growth throughout 2017.

We have exceeded 2.3 million contracts in the free market, including approximately two contracts per client, which results in a dual energy percentage in the residential market over 50% and a 45% penetration of the Funciona service. Our challenge for the coming years is to attract more customers, for which we started a mass media positioning campaign in 2017 which will continue in 2018. Along with our marathon sponsorship across Spain, this campaign is helping acquaint the public with EDP and its values.

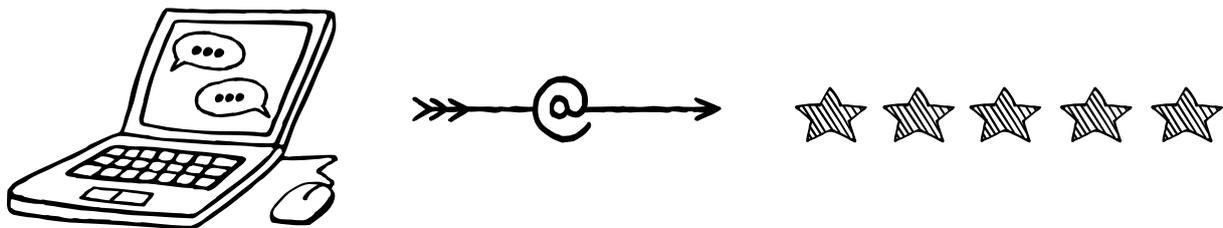
We strive for excellence in our interactions with customers in all our channels. The Spanish Association of Experts in Customer Relationship Management has recognised EDP as the company that provides the best customer service in Spain with two Gold CRC (Customer Relationship Centre) Awards, for the best telemarketing and the best onsite customer care. We are expanding our office network, seeking a balance between costs and capillarity to serve as many customers as possible.

We are still developing EDP Online, our private area, to allow customers to carry out any operation or procedure they may perform through traditional channels on a self-service basis as well. Yet, we have decided to take a step further, as we are fully aware that digital disruption is massive and is turning from an option into the new standard. In 2017, we started a Digitisation Programme, which affects the entire commercial value chain and which will involve the revision and redefinition of all our processes to adapt our company to the new demands of customers.

Our commitment to customers has been recognised once again this year with the **2017 Leader in Satisfaction Award granted by Stiga”.**



EDP aims to remain the leader in Spain as regards the quality of the multiple customer care channels, both in B2B and B2C, supported by new investments in differentiating and innovative campaigns to help the EDP brand become a benchmark brand in Spain in the medium term.



**JAVIER FLÓREZ FERNÁNDEZ**  
**B2B Sales Director**

"During 2017, we have focused our efforts on fostering a differentiated offer which allows our customers to reduce their energy bills. To this end, we have improved our range of products and services, increasing the training of our commercial managers and implementing a plan to approach our main current and potential customers, so that EDP is not only an energy supplier, but also a true consultant on energy and energy efficiency.



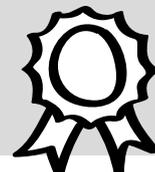
We have embodied this increase in the willingness to advise our customers through the Managers Projects, which aims to change the way we work and design initiatives that allow us to be closer to our customers and help them optimise their energy bill".

**RICARDO GONZÁLEZ SANTANDER**  
**Marketing and B2C Sales Director**

"EDP is the free-market retailer that has attracted more electricity customers and the one with the highest percentage of dual energy packages in 2017. We have reinforced our commercial activity to attract new customers via face-to-face and customer care channels, telemarketing and leads in all the autonomous regions across the peninsula. Thanks to our differentiated range, we have more connected customers with an average of 2 products and the highest loyalty rate in our areas of influence.

By launching our *Máximo Ahorro* (in English: Maximun Savings) offer, we have repositioned our offer in the most dynamic segments. Our challenge is to exploit the digital transformation of our commercial processes and big data, to further develop a more personalised and differentiated range of services for consumption management by means of time-scheduled products, and the development of a comprehensive Smart Home concept that features our new efficiency, electricity mobility and self-consumption generation services.

In 2017, the sector has recognised us with the **Gold CRC Award in Customer Care and we have ranked 1st in the ISCX in the supply of piped gas".**





**REGULATION**

Proactive regulatory management

**SANTIAGO BORDIÚ CIENFUEGOS-JOVELLANOS**  
**Regulation Director**

“In 2017, the issues related to energy transition and decarbonisation have become particularly relevant in the regulation of the Spanish energy sector. In this regard, the Spanish Government created in July a Commission of experts on energy transition, in order to analyse how the current Spanish technological mix should change to meet the European goals concerning the decarbonisation of the economy by 2030, and it has also announced a future Law on Climate Change and Energy Transition and a Comprehensive National Energy and Climate Plan. It must be taken into account that the European Union has set a target of an 80% reduction in greenhouse gas emissions by 2050 and, in order to achieve this, appropriate intermediate goals must be defined for 2030. The EU Clean Energy Package continued to be processed during 2016 with this target in mind. Particularly in Spain, the role of coal and nuclear energy must be regulated in the energy transition until renewables acquire a sufficient degree of manageability.



The role of European regulators is thus growing in energy regulation in Spain and, in 2017, we have paid special attention to the impact that may affect the payments which are received by manageable centres for being available (“capacity payments”) and, ultimately, any remuneration scheme that may be considered a State subsidy”.

**Other significant regulatory issues during 2017 include, among others:**

- The new regulation on the discount rate, which includes the definition of the new criteria to apply this discount in the bills of the most vulnerable customers according to income criteria.
- The electrical distribution remuneration, which puts the possible revision of the remuneration model into question.
- The auction of new production facilities with renewable energy sources, mainly photovoltaic and wind, which must be operating as of 2020.
- The announcement by the Ministry of a possible revision of the regulatory model on electric vehicle charging and on self-consumption.
- The possible revision of the logistic model of the natural gas chain.



PEOPLE

Commitment to people

**FÉLIX ARRIBAS ARIAS**  
**Human Resources, Finances and Administration Director**

"2017 has been marked by the deep simplification of the corporate structure of the group, firstly due to the sale of the gas distribution business, and secondly due to the merger of different retailer service companies. This simplification, which is still in progress, will help us become a more efficient group, in which around 1,300 collaborators participate in Spain.

The 2<sup>nd</sup> Collective Bargaining Agreement of the Group expired in this financial year and the Negotiating Committee of the 3<sup>rd</sup> Collective Bargaining Agreement of the EDP Spain Group was created. The company intends to sign a new Collective Bargaining Agreement for all its staff throughout 2018.

Regardless of the content of the future Agreement, we have developed multiple measures in order to become a more and more family-responsible company every day.



**Thus, as part of our EDP is Commitment to People programme, we launched the following initiatives:**



**EDP es Conciliación (in English: EDP is Work-Personal Life Balance) programme.** It provides various advantages and free services, made available to collaborators and their families to help them in their daily life, supported by companies specialised in providing personal and family assistance to employees. *EDP España* has been the first company, based in Asturias, to offer these services, being recognised as a Socially Responsible Company by its Staff.



Fruit in the workplace. As part of the **Eat healthy, eat fruit** measure, employees are offered a bag of fruit every week. We implemented this measure in 2016 as a pilot experience in the Oviedo and Bilbao offices, and due to its remarkable success, we have extended it to other work centres. This initiative is part of the *EDP es Saludable* (in English: EDP is Healthy) programme, which promotes healthy living habits, thus contributing to improve employees' quality of life and health.



Organisation of the **Raider Initiative**, a unique event that promotes teamwork, collaboration, and leadership among EDP Spain employees. The 2017 Raider was attended by more than 200 participants, coming from work centres in almost all the Autonomous Regions.



**Health Insurance.** We have added to the same coverages the possibility to underwrite a refund policy to be able to consult any national or international expert instead of being limited to an established medical directory".



**JOSÉ JOAQUÍN LODARES**  
**Management Information Director**

"The sale of the gas distribution business has been the most significant event of 2017. From the traditional business perspective, this financial year has been very complicated, since it featured several adverse factors: increased commercial competition, very dry weather and regulatory threats.

Concerning the aforementioned sale, we can only point out that it has been wonderful from a financial perspective, since the obtained price was very high, and this business had already reached its full maturity. Therefore, the possibilities of further growth in the same sector were minimal.

However, leaving aside the strong specific impact that it caused on 2017 results, this transaction involved a structural change which strongly affects *EDP España's* configuration and economic dimension. It immediately makes us face the challenge of remaining competitive despite operating at a smaller scale.

It is well known that regulated business provides a stable result basis which allows cushioning the variability inherent in the free-market results. In our new configuration, this stable basis will be much smaller than the one we had before, and not only as a consequence of the sale of the gas distribution business, but also because the remuneration of electricity distribution has been threatened in 2017 via a procedure that declared it was detrimental to the public interest, which has adversely affected the results for the year, and will foreseeably affect future results.

As regards the generation business, the acceleration of the change in the energy model, which is translated into increasingly smaller margins for traditional technologies, have led us to recognise a significant impairment in the book value of the Soto de Ribera thermal power plant. With this consolidation, recognised as an extraordinary event in the results for 2017, we have alleviated the tension that this unavoidable process of change will generate in future years.

Our retailer activity has obtained highly satisfactory results at the year-end closing, despite the fact that an increased competitive pressure in 2017 limited the size of our portfolio. However, it is our accumulated effort to improve our positioning, both in the sale of energy and services, what allows us to expect with guarantee a path of positive results for the coming years".



**VALENTÍN VALCUENDE RODRÍGUEZ**  
**Administration Director**

"In 2017, I would highlight the start-up in January 2017 of our new SIM F financial-economic platform. This platform, which has been joined by *EDP España*, is also used by EDP companies in Portugal. It is intended to become in the future a single platform used by all the companies of the EDP group, with the corresponding advantages.

Likewise, we have completed the internal restructuring of *EDP España* to optimise the organisation and facilitate the subsequent sale of the gas distribution subgroup which is now integrated in Nortegas.

From a more technical perspective, we have reviewed the criteria used to record the ordinary income of the EDP Spain group to adapt them to the new accounting standard IFRS 15 which will be effective as of 1 January 2018".

**SUSTAINABILITY**

*Committed to sustainable development*

**Sustainable Development Goals**

In September 2015, the United Nations General Assembly passed the 2030 Agenda for Sustainable Development, including the **Sustainable Development Goals (SDGs)**, a global call to implement measures to solve the major issues our planet is facing, i.e., putting an end to poverty and inequality, achieving gender equality and ensuring access to decent employment for all people, facilitating access to health services and to an adequate education, protecting the environment and ensuring that all people enjoy peace and prosperity.

In 2015, EDP signed the commitments relating affordable and clean energy (SDG 7) and actions to combat climate change (SDG 13) in the Private Sector Forum of the Sustainable Development Summit in New York.

In May 2017, EDP’s Executive Board of Directors approved a new public statement in which they undertook to align the company’s strategy with the 2030 Agenda, expanding the organisation’s commitment to a total of 8 SDGs through the Strategic Plan of the Group in accordance with the different locations and activities.

This EDP’s strategic plan specifies commitments aimed at contributing to meet the United Nations Sustainable Development Goals (SDG), which are complemented with dissemination and discussion actions to mobilise all collaborators for a joint action.



Red Española

EDP joined the Global Compact Spanish Network in 2005. The **SDGs are interrelated with the 10 Principles established in the Global Compact** concerning human rights, labour regulations, environment and fight against corruption, providing companies with a **universal and consistent framework to guide their contributions to sustainable development**



**YOLANDA FERNÁNDEZ MONTES**

**Director for the Environment, Sustainability, Innovation and Quality**

"In May 2017, EDP's Executive Board of Directors publicly committed to align the company's business strategy with the 2030 Agenda, which contains the 17 Sustainable Development Goals (SDGs) of the United Nations.

This was possible for two main reasons. Firstly, the actual origin of the SDGs as we know them today, since they are goals agreed upon between member states, civil society and other stakeholders, which tackle the interconnected elements of sustainable development: economic growth, social inclusion and the protection of the environment.

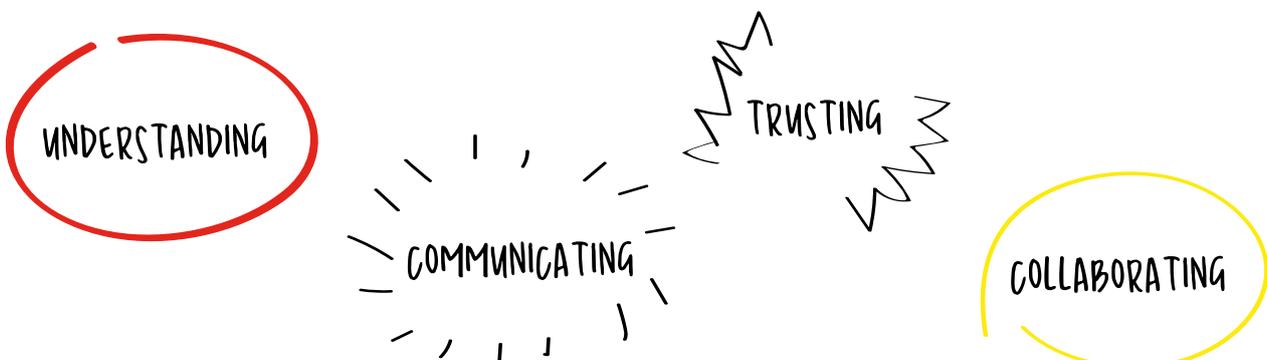
At EDP we have been working on sustainable development for some time and we have been internationally recognised in this regard: in 2008 we entered the DJSI, in 2013 and 2014 we ranked first in the classification of the public service sector, and in 2017, after being part of the index for ten years, we achieved the best score of the whole series.

In order to take into account the relevant issues for stakeholders, we developed in 2015 a relationship model with our stakeholders, which, during 2017, has been translated into 144 direct interviews with suppliers, NGOs and Local Communities. The resulting action plans also affect a large number of Sustainable Development Goals. With regard to suppliers, we have already implemented improvement actions concerning technical specifications, trading volumes, or improvements in the transparency of awarding processes, among other issues. As for local communities, we should highlight the promotion of local employment, local environmental projects, participation, and dialogue and engagement with the community.

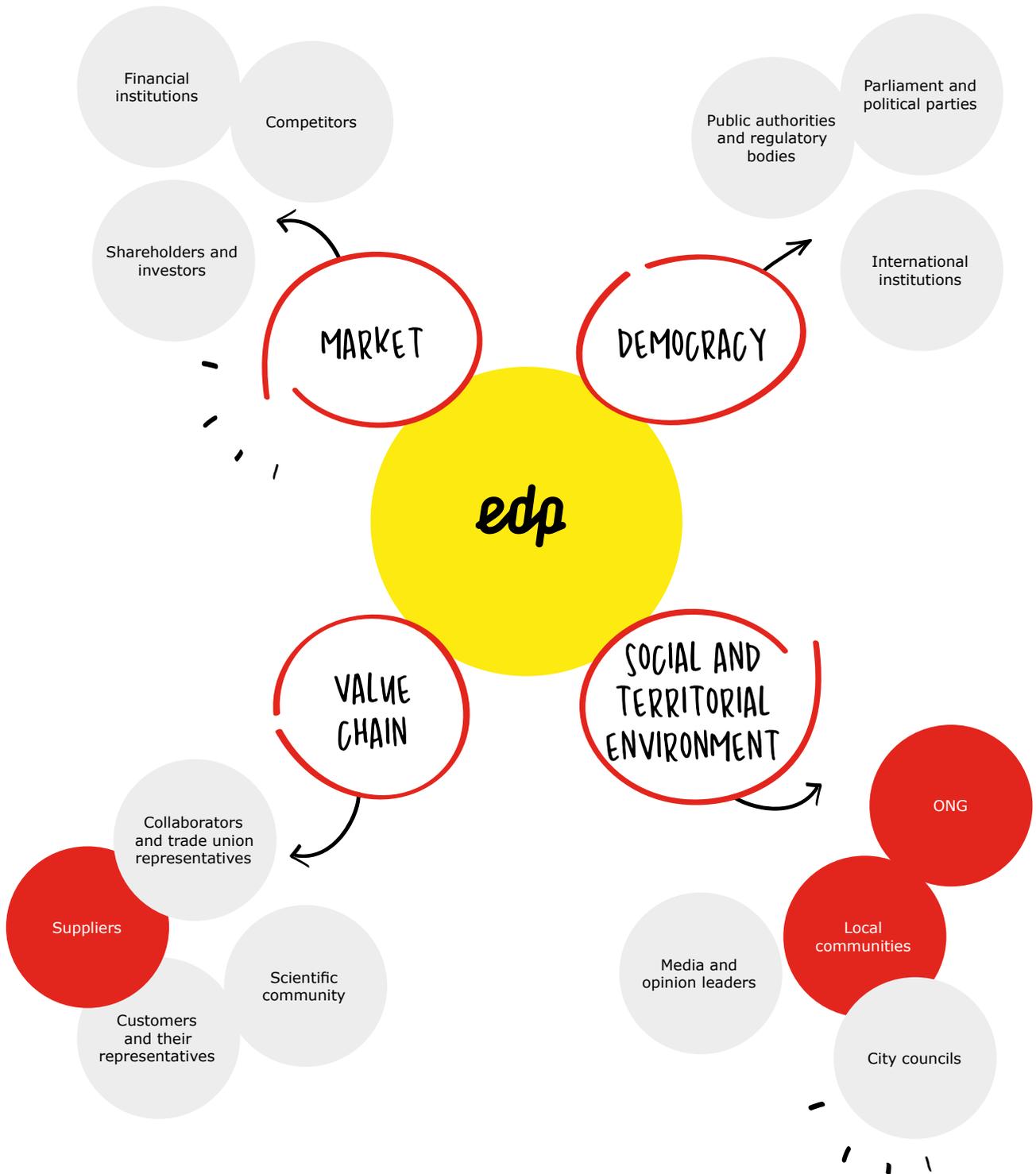
We are also working on a new Sustainability Plan which, along with the Social Investment Policy and our commitment to the Sustainable Development Goals, make up our strategic lines to control the impact of the company's decisions and activities on society and the environment".

**Dialogue with the stakeholders**

The Policy on the relationship with stakeholders aims to go beyond the compliance with legal formal requirements, contributing to an effective and authentic involvement of the different stakeholders. **Based on such policy, four principles or commitments are established:**

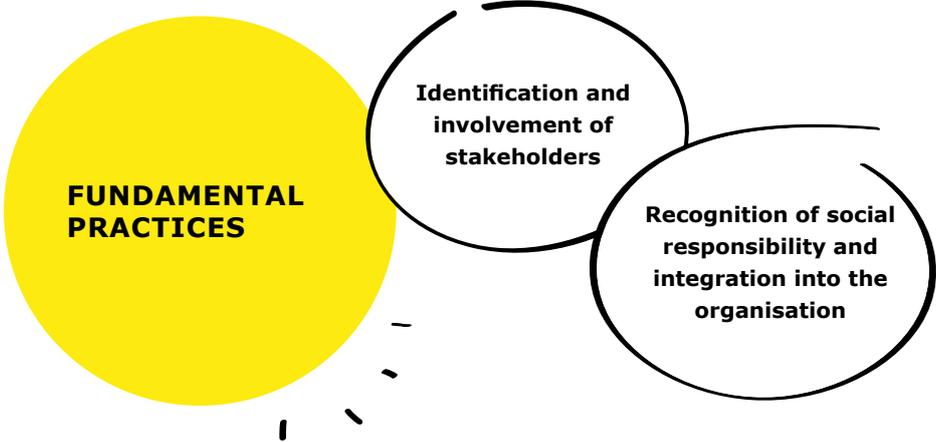


Thus, during 2017, we have maintained an open dialogue with all the stakeholders, especially: suppliers, local communities and NGOs.





EDP’s sustainability strategy tackles these matters, prioritised in accordance with the results of the open dialogue process with the stakeholders, as you will see in the next chapters.

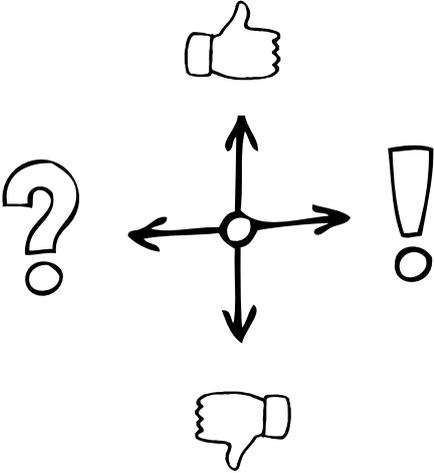


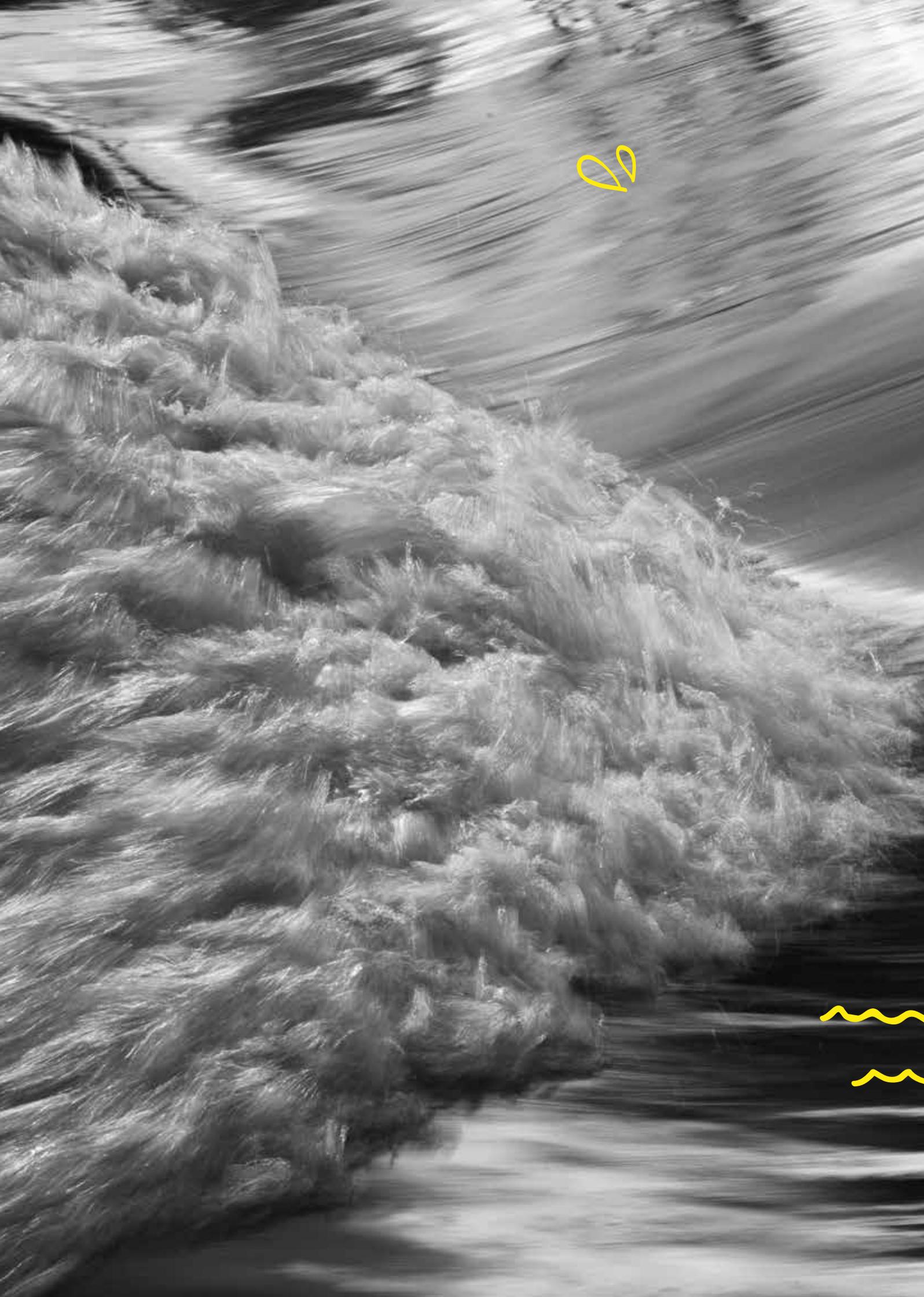
**MATTERS**

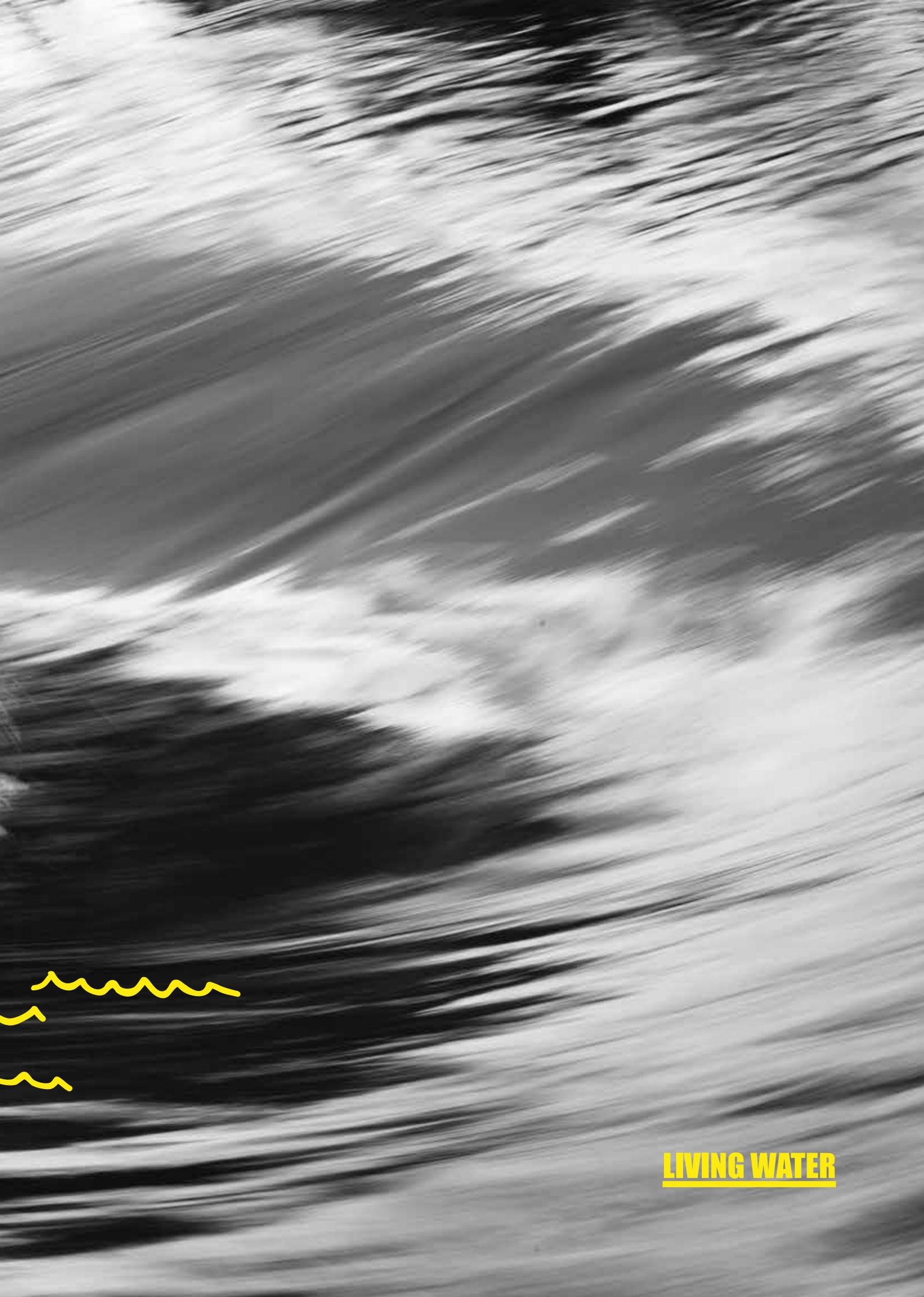
**GOVERNANCE**

- Human rights
- Labour practices
- Environment
- Fair transaction practices
- Consumer affairs
- Active participation and development of the community

**ACTIONS AND EXPECTATIONS**







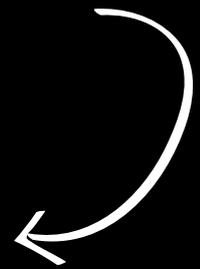
**LIVING WATER**

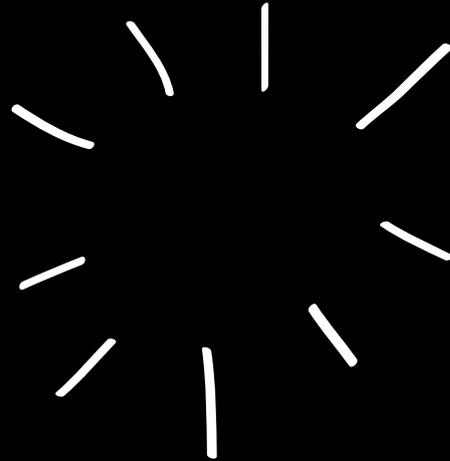


**THE**  
**LIVING ENERGY**  
**BOOK**



by *edp*





# 03

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# **03 PERFORMANCE**

## **3.1. HUMAN RIGHTS**

In a social responsible company, the chapter of human rights acquires a relevant significance, both from the point of view of good governance as well as regarding the respect for the essential goal of maximising its contribution to sustainable development, which considers the “respect for human rights” as one of its cornerstones.

Thus, human rights are considered a fundamental principle and a key matter in the development and implementation of Corporate Social Responsibility (CSR) in a company.



**In 2008, the United Nation Human Rights Council approved the guiding principles on the respect for Human Rights known as Ruggie principles, a document referring to companies and human rights which is developed within the “protect, respect and remedy” framework and is based on recognising:**



The current obligations of the States to respect, protect and meet human rights and fundamental freedoms.



The role of companies as specialised organs of society which perform specialised functions and must abide by all the applicable laws and respect human rights.



The need for the rights and obligations to be accompanied by appropriate and effective remedies in case of non-compliance.

They apply to all the States and all the companies, both transnational and other types, regardless of their size, sector, location, owners and structure and they aim to improve the standards and practices regarding business and human rights in order to obtain tangible results for the affected people and communities, as well as contributing to a socially sustainable globalisation.

The Board of Directors approved in 2017 for *EDP España* the **Public Declaration of Commitment to Human Rights** previously approved by EDP’s Executive Board of Directors, undertaking in its main corporate documents, such as the Code of Ethics and the Sustainable Development Principles, the Guiding Principles for companies endorsed by the United Nations Human Rights Council – Ruggie Principles.

The second step is to take into account a series of aspects that help implementing a human right support and respect policy. A due diligence process which investigates and identifies, prevents and tackles the actual or potential impacts on Human Rights resulted from its activities or those related thereto; assesses risk situations for human rights; avoids getting involved with those violating them; solves claims; does not discriminate vulnerable groups and respects all civil, political, economic, social, cultural, occupational and health rights as well as all labour principles and fundamental rights.

**EDP respects and undertakes to promote, particularly in the supply chain, human rights and decent labour practices by means of different tools which affect several of the rights to be taken into consideration.**



## **DECLARATION OF RESPECT FOR HUMAN AND LABOUR RIGHTS**

In line with the EDP Group's Human and Labour Rights Policy and in application of the UN Human Rights Council's Guiding Principles for Business (Ruggie Principles), EDP has undertaken the following commitments in its main corporate documents, such as the Code of Ethics and the Principles of Sustainable Development:

- To act in full compliance with the legislation and regulations of the regions in which it operates, with integrity and good governance, promoting respect for Human Rights and labour practices, within its sphere of influence and in the value chain, including partners, suppliers and customers as well as its employees.
- Respect the Universal Declaration of Human Rights, the International Labour Organization Conventions, the United Nations Global Compact and the Guiding Principles for Business: the Ruggie Principles.
- Stand against arbitrary detention, torture or execution and in favour of the freedom of conscience, religion, organisation, association, opinion, expression and the right to privacy and property.
- Not to use child or forced labour or tolerate such practices by the third parties with which it establishes relationships.
- Respect freedom of association and recognise the right to collective bargaining.
- Direct its labour policies and procedures to prevent unjustified discrimination or differentiated treatment on the basis of ethnic or social origin, gender or sexual orientation, age, religion, marital status, disability, political orientation, opinion, nature or trade unions.
- Give priority to the safety, health and well-being of employees, ensuring the development of appropriate occupational health and safety management systems.
- Respect, promote and ensure decent working conditions and not to tolerate acts of psychological abuse or moral coercion.
- Provide regular information and training on Human Rights and labour practices to its employees, partners and value chain: suppliers and customers.
- Maintain a close relationship with communities in the regions in which it operates, establishing a regular, open and frank dialogue, seeking to understand their needs, respecting their cultural integrity and seeking to contribute to the improvement of the living conditions of the local population, recognising the rights of ethnic minorities and indigenous peoples.
- Respect the precautionary principle, where its activities may result in serious and irreversible damage to human life or health or to the environment which, although uncertain, is scientifically feasible, by taking measures to prevent or mitigate such effects.

In this respect, EDP is committed to:

- Maintaining a Programme to monitor respect for Human and Labour Rights, to identify risks and actions in order to avoid, minimise or repair possible negative impacts arising from its business and activities.

These Commitments to Human and Labour Rights apply to all the Business Units and Companies in the EDP Group, to investee and associated companies over which the Group has management control, and to all its employees and managers, as well as to service suppliers acting on our behalf. For the remaining investee, associated and intervening companies in the supply chain, EDP will promote the alignment of the corresponding policies, strategies and practices with these Commitments to respect for Human and Labour Rights.

**Executive Board of Directors**

May 2017



## **3.2. LABOUR PRACTICES**

### **3.2.1. PREVENTION**

Our policy is based on the constant strengthening of the occupational health and safety culture which is a priority in EDP's business management. We make available all the resources guaranteeing a safe and healthy work environment, proper training and the total protection of facilities and equipment, implementing the best techniques for such purpose. All this is combined with the supervision and update of working procedures, in order to eliminate or minimise risks for employees, providers of services and all those persons alien to the company that may be in contact with our infrastructures.

#### **MARCOS ANTUÑA EGOCHEAGA** **Project and New Business Director**

"The Global Prevention Index (GPI), indicator of our scorecard, reflects, in the Generation, Electricity Grids and Retailer areas, at the closing of 2017, a good preventive performance throughout the organisation as a whole.

Focusing on accident data, our own and those suffered by our collaborating companies, have rebounded slightly, being worth mentioning the minor nature of said accidents and that they are unrelated, mostly, to the materialisation of risks in our own activity. Likewise, the low accident rate in the construction projects of the denitrification facilities for the thermal power plants should also be stressed, given the large scale and complexity of the works.

In order to minimise the accident rates in those activities in which the most significant deviations occurred, the monitoring efforts were concentrated by increasing the number of inspections to all our collaborating companies.

A high percentage of the incident notifications reported are related to the field of road safety. There is one relevant aspect regarding this that should be noted: we have obtained, in the last quarter of the year, the "Asturias Certification for Safe Mobility in the Company", which should help in pooling efforts and resources in this area and trying to minimise future related incidents.

Another aspect to highlight has been managing to implement all of the actions included in the Benchmarking Study carried out in the year 2015, whose follow-up was conducted regularly in the meetings of the Prevention Management Committee.

Last, but not least, we have implemented a standard for assessing the learning achievement of those prevention training courses considered to be critical for the performance of fundamental tasks in certain positions; a standard which has also enjoyed the consensus and approval from all the members of the Central Health and Safety Committee.

As regards Physical Security, during 2017, security systems were installed in four Substations and four Liquefied Natural Gas plants, the equipment on the other five Substations, the Sidergas plant, and the access control systems to the Gesta Headquarters Building were improved and modernised. In addition, we carried out the compulsory inspections on the security systems at all our facilities, as well as various preventive and corrective maintenance works of said facilities, which amounted to a significant number of interventions. There was also further progress in the specifications of the new security systems for the Corredoria Complex, which must be installed throughout 2018, as well as other small interventions in the security systems. Likewise, the revision of the OSP (Operator Security Plan) was undertaken during 2017 and was delivered in due time and proper form. Another outstanding fact was that there was a change in the Security Director's position, complying with all the relevant legal requirements, as regards the National Centre for the Protection of Infrastructures and Cybersecurity (CNPIC) and Private Security".



**SAFE DRIVING**

EDP España has firmly committed to the inclusion of Sustainable Mobility and Road Safety in its Safety and Health Policy and its Corporate Social Responsibility. EDP’s commitment to the reduction of road accidents at work was reinforced upon the signing of the European Road Safety Charter, enacted in 2006, which aims to carry out specific actions to promote road safety among employees.

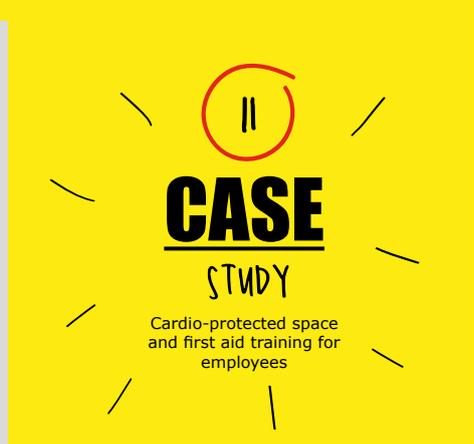
In order to minimise traffic accidents at work, the company has promoted a Mobility and Road Safety Plan, based on the knowledge and habits of their professionals. The Plan translates into theoretical and practical training through e-learning platforms, safe and efficient driving courses, and even driving simulators. Raising awareness among professionals about the road risks to which they are subjected daily is essential.

Thus, during the 2016-2018 period, an “Awareness Programme on Safe Driving” was carried out in the framework of the Plan. By way of example, in 2017, 165 sessions were held with a total participation of 353 employees – 27% of the workforce.

As complementary actions to training, it is worth mentioning the awareness campaigns aimed at disseminating that road safety is not exclusively an occupational matter, but also affects other aspects of our lives, our leisure time, family, friends, etc. These information campaigns are carried out through e-mail, leaflets and information posters in each of the group’s work centres.

All these actions culminated in being awarded the “Asturias Certification for Safe Mobility in the Company”, promoted by the Asturian Institute for the Prevention of Occupational Hazards as a tool to recognise, promote and encourage the management of road safety at work by means of implementing Road Safety Plans at companies, in accordance with the requirements of the Safe Mobility Guide for Companies, developed by the Directorate General for Traffic (DGT) and the Occupational Hazard Prevention Institute of Asturias (IAPRL) in 2017.





**CARDIO-PROTECTED SPACE**

*EDP España* has installed Semi-Automated External Defibrillators (SAEDs) in its main work centres, while it has also implemented a full formal training programme for all those volunteers comprising the First Response Teams and the Evacuation and Alarm Teams of such work centres who have the necessary qualifications and knowledge to use them.

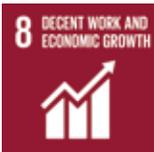
This SAED equipment enable a quick and safe application of defibrillation by authorised non-medical staff, which is added to the first aid practices which are periodically implemented both by means of drills and specific training sessions.



**3.2.2. SOCIAL BENEFITS**

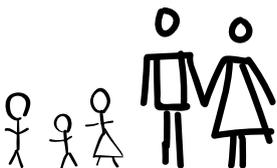
In 2017, we launched the *EDP es Conciliación* programme and the 3 existing programmes were joined in one single portal, *EDP es Compromiso con las personas* (in English: EDP is Commitment to People), which makes available a set of initiatives, benefits and services to employees.

**The programme is structured in 3 cores:**



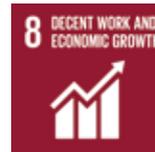
**EDP ES  
CONCILIACIÓN**

For the employees' family-professional life balance, including a set of benefits and free services, which were put at the disposal of employees and their beneficiaries (spouses, children under 30, parents and parents-in-law) to help them in their daily life.



**EDP ES  
SALUDABLE**

Inspired in the wellbeing culture, it provides, in a fun and simple way, guidelines to get into habits that improve the employees' quality of life, through different initiatives based on three fundamental cores: nutrition, sports and wellbeing.



**EDP ES  
BENEFICIOS PLUS**

Which puts a portal at the disposal of employees so they can enjoy many exclusive offers in technology, leisure, etc.



**The positive impact of this programme is reflected on EDP España's Climate Survey 2017, in which employees have confirmed that:**

1

The company provides them with social benefits that meet their needs.

2

Their benefits are adequate compared to the benefits received by other employees in other companies.

3

The family-professional life balance measures promoted by EDP Spain help achieving a balance between personal life and work.



### 3.2.3. TRAINING AND DEVELOPMENT

EDP España is committed to the people that are part of its company so that training continues to be a fundamental mean for the personal and professional development of its employees.

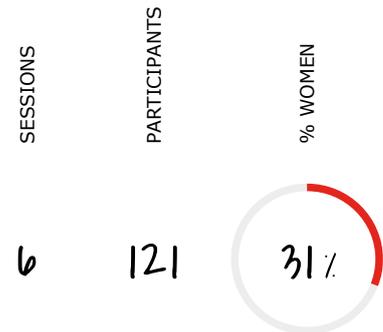


**The most prominent training programmes that were carried out during 2017 in EDP España are detailed below:**

#### Lead Now programme for EDP España

Corporate programme addressed to all managers, which aims to develop management and leadership competences in line with our Competence Model, thus implementing and standardising EDP's leadership style. In addition to the **onsite workshops**, it comprises **self-awareness** questionnaires and four sessions of **individual coaching**, amounting to 32 hours per participant on global average.

The potential positive impact of the "Lead Now" programme for managers is shown in the Climate Survey 2017, in which EDP España's employees have replied yes to the questions about whether they have sufficient autonomy to perform their work efficaciously (73% yes) and whether their line manager helps them obtaining personal and professional life balance (75% yes).



#### Meaningful Conversations programme

Global Corporate Programme, addressed to all EDP managers, which aims to create a meritocracy culture, continuous feedback and transparency, as well as developing the aptitude and abilities to manage significant conversations with the teams, fostering differentiation in performances and development opportunities.



#### EDP Sustainability Course

Sustainability is an integral part of EDP's strategy, which is the reason why this training programme has been created. It is addressed to all EDP employees and aims to put special emphasis on the meaning of sustainability and remember what we do and which our undertaken commitments are, so the concept of sustainable development remains present in our daily activities, whether they are professional or personal.



SESSIONS  
PARTICIPANTS  
% WOMEN

**EDP es Saludable informative sessions**

Informative sessions to promote healthy life habits around three cores: nutrition, sports and wellbeing.

4

144



**Road Safety Programme**

Safe Driving Awareness programme within the framework of the Road Safety and Mobility Plan, addressed to all the employees of *EDP España* during the period 2016-2018.

165

353



**EDP Ethical Course - Tone at the Middle**

In 2015, a set of workshops named Tone at the Top were offered to the Senior Management. They aimed to identify and discuss the cultural aspects favouring unethical practices in EDP as well as to strengthen the alignment of the Senior Management. The sessions carried out in 2017, addressed to intermediate managers, aim to continue this alignment of the organisation in a more operational way, with those who exert the most influence on employees on a daily basis.

7

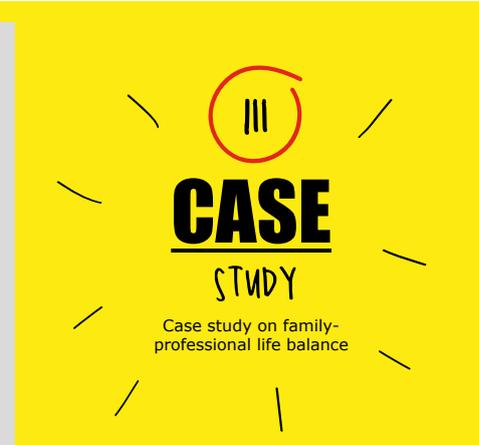
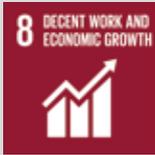
91



**3.2.4. EMPLOYMENT STABILITY**

Employment stability may be assessed from a double point of view. On one hand, from the employee's point of view, who values a stable long-term relationship with the company, and, on the other hand, from a business approach, which values that the staff is identified with the company and thus motivated, entailing a high level of productivity.

From the employee's point of view, *EDP España* guarantees this stability through permanent contracts and by having virtually all employees subject to the Collective Bargaining Agreement. And this is periodically reflected in the work environment surveys, in which employment stability is always one of the most valued aspects.



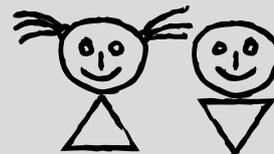
## **FAMILY-PROFESSIONAL LIFE BALANCE**

EDP España guarantees a family-friendly environment by implementing a set of measures and benefits addressed to all workers so that they can achieve the balance between family and work life they need, with prerogatives that go beyond those set in the Statute of Workers Rights, such as: paid leaves, flexible hours, continuous working day in specific times of the year, etc. as well as specific measures for different types of groups: staff with disabled family members, victims of gender-based violence, and pregnant and breastfeeding women.

Concerning family-professional life balance, it should be highlighted the extension of the breastfeeding leave, regulatory official leaves, flexible hours envisaged as a family-friendly policy, the possibility for standard-working-day staff to replace up to a maximum of 2 days of holidays with a 16-hour bank for family-professional life balance and the right to enjoy those public holidays that fall on a Saturday.

There are also various protective measures during pregnancy. EDP has several parking places at the disposal of pregnant employees. They are exempted, if they wish so, from working irregularly distributed hours in their work day from the sixth month of pregnancy and, at the same time, there is an established paid leave of 15 calendar days prior to the birth.

There are also significant financial aids for employees. For workers who are in charge of family members with a disability, EDP has created an annual contribution with the aim to promote employment and social inclusion for the workers' children, in addition to a monthly allocation for special assistance. EDP puts at the disposal of those workers who request it a financial aid since



the child in their charge is five months old until September of the year in which he/she turns three years old.

The company also gives for the birth of a worker's child a bonus per newborn baby as a measure for promoting the balance between work and family life within the *Proyecto Conciliar*.

EDP allocates a financial aid intended for leasing the so-called "summer homes", which are put at the employees' disposal through the Social Action Committee. Also, electricity supply, pension schemes, different types of loans offered by the company without accruing any interest, the set of scholarships and school aids should be highlighted too.

These, and many others, are the family-professional life balance measures and social benefits that EDP makes available to all the employees so that they can achieve the balance between family and work life they need.

**3.2.5. LEAN**

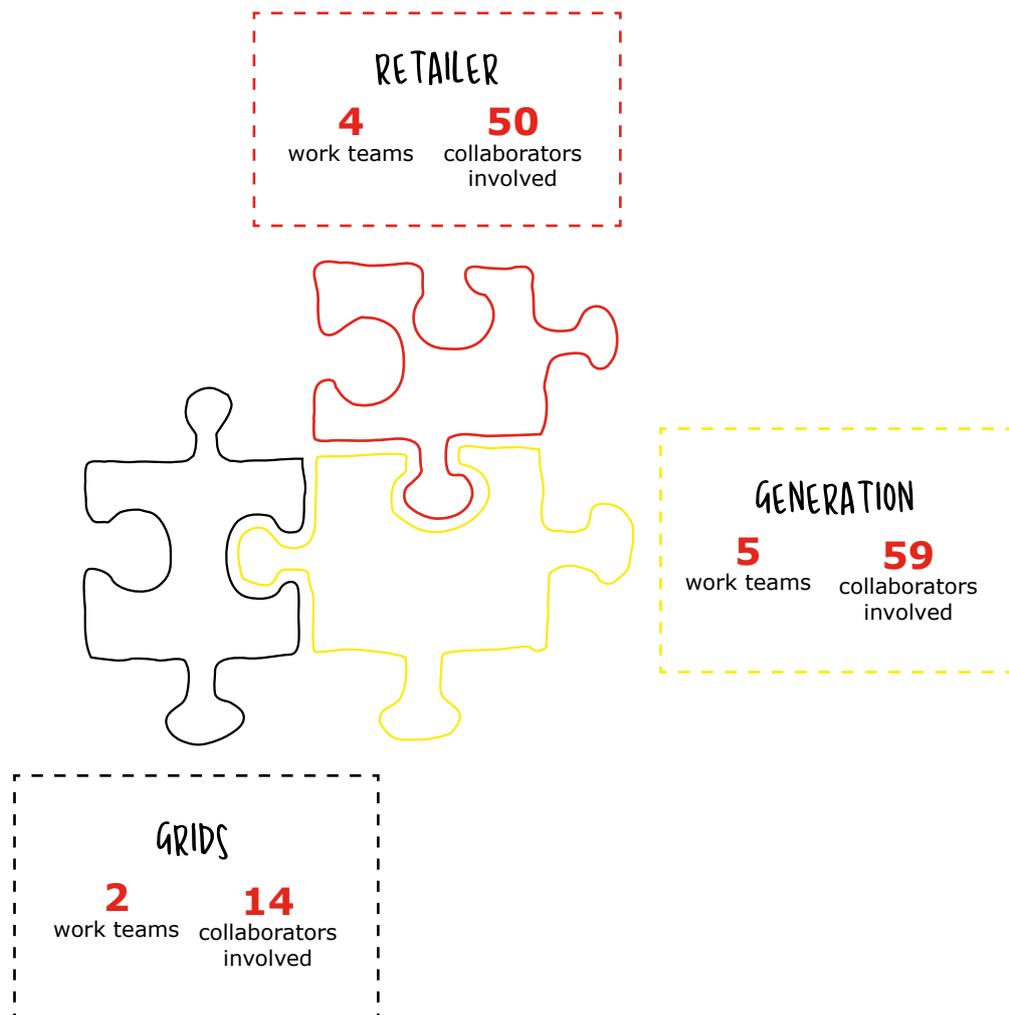
LEAN is a programme that pursues the continuous improvement of the business through the participation of all the company's employees in the identification of added-value opportunities and the generation of solutions enabling to manage processes with higher efficacy and efficiency.

Within LEAN, the improvement initiatives that are carried out are related to customers, efficiency and management practices, availability of equipment and facilities, safety and health, and environment.

In *EDP España*, LEAN has been implemented since 2006 in electricity generation and distribution and retailing activities, involving the participation of the other areas for the development of more cross-sectional initiatives. Up to date, more than 800 collaborators have directly participated in the programme.



**LEAN CONTINUOUS IMPROVEMENT WORK GROUPS**



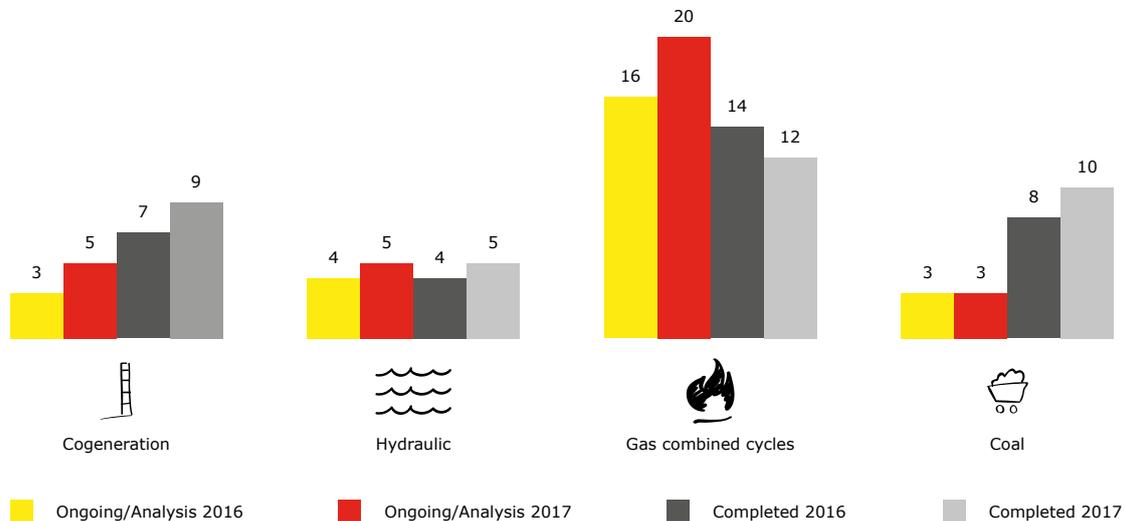


During 2017, 23 teams including 207 direct collaborators have been operational. In total figures, from the start of the programme, 3,710 initiatives have been identified, out of which 2,778 have been implemented and 342 are currently being developed.



As a novelty, in the retailer area, two new teams have been created in 2017 in the energy efficiency services and smart home areas.

Another novelty is the consolidation of the LEAN Iberian Programme for Generation, launched in 2016 with the main goal to share knowledge and boost synergies between managements and facilities. It is comprised by 4 work teams and 42 collaborators involved.



**Taking this programme as an example, EDP Retailer’s Board of Directors also approved the creation of an Iberian Programme for Continuous Improvement, which started in September and within the framework of which joint initiatives in the onsite channel commercial areas are already being developed.**

**2<sup>nd</sup> Balance for the LEAN IBERIAN Programme: Pola de Somiedo**

More than 100 employees in EDP’s generation area gathered in June in Pola de Somiedo to participate in the second balance session of the Lean Iberian Programme for Continuous Improvement.

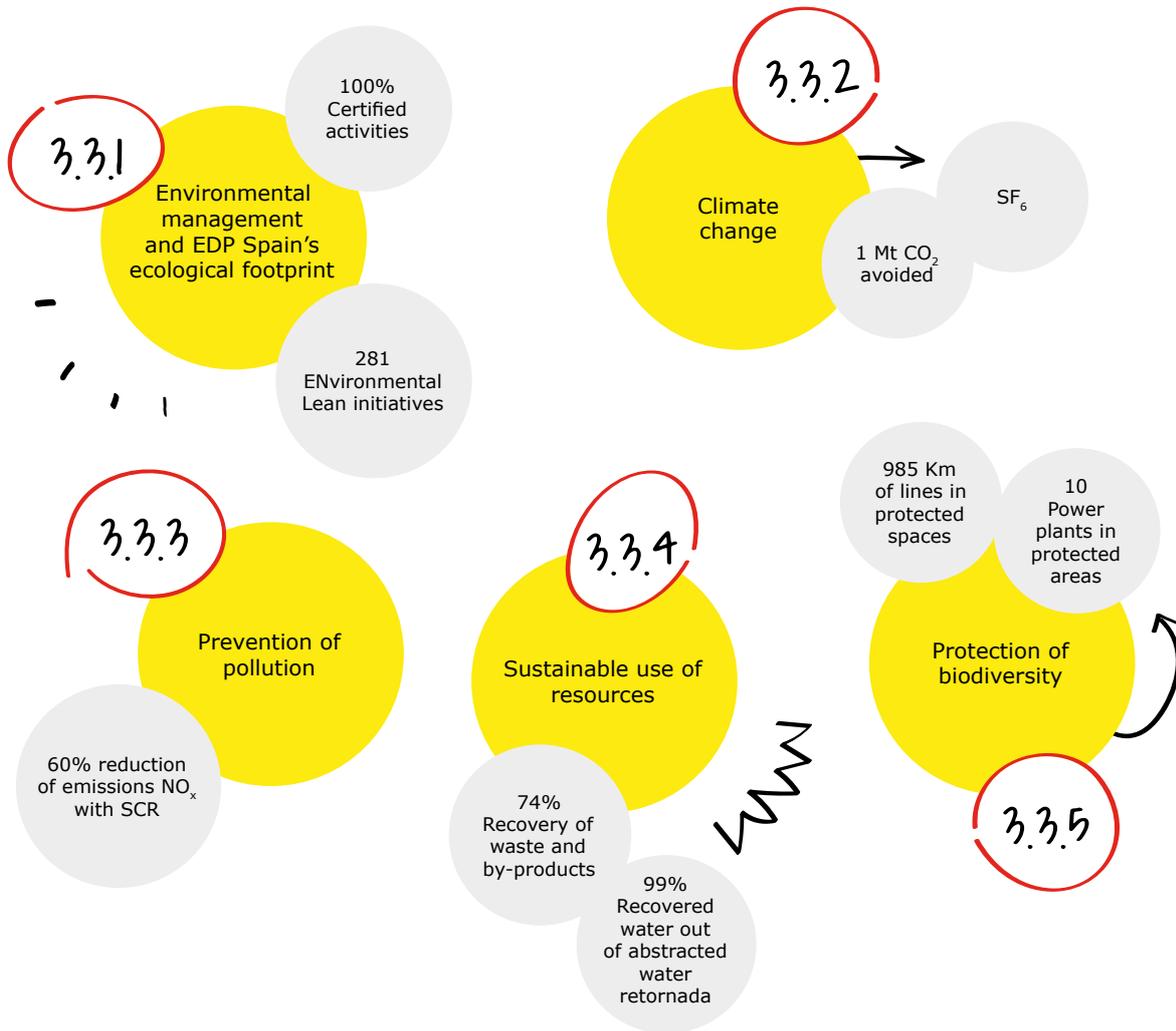
The meeting has been used to assess the state of the programme, submit initiatives and share experiences among the different technologies and geographies, and discuss the next steps.

EDP has chosen this location for the sessions due to its close bond with the council of Somiedo, in the year of La Malva plant’s centennial.

### 3.3. ENVIRONMENT

2017 has been a year with many top news about environmental issues: climate change, the impact of traffic in the air quality, the approval of new emission limits for big combustion installations, the sustainable use of natural resources and the prevention of pollution. All of them are, in turn, the most relevant matters for the stakeholders in the materiality study conducted.

This chapter develops these topics in accordance with *EDP España's* relevant milestones in the matter during 2017:



#### 3.3.1. ENVIRONMENTAL MANAGEMENT

*EDP España* has an adaptation plan to meet the new ISO 14001:2015 standard which was initiated by the end of 2016 with the certificates of the Gesta and General Concha buildings. In 2017, the Environmental Management Systems (EMS) of Hydraulic and Power Distribution Plants were adapted, and in the first semester of 2018, the entire Generation will be adapted.





**This adaptation process has involved:**

- Identifying risks and opportunities in each business by analysing both the context external to the company (macroeconomic, social and environmental variables which affect its activity) and the internal characteristics thereof (strengths and weaknesses derived from EDP's own singularities).
- Taking into consideration the expectations of the relevant stakeholders by analysing sources of information representing each of them; we have analysed both direct sources (direct contacts with stakeholders) and indirect sources (surveys and papers about topics of interest for each stakeholder).

These two processes have resulted in action plans necessary to minimise risks and threats and exploit opportunities and strengths. These action plans have become part of the business plan for each area, thus enabling to specify their far-reaching strategic lines.

**The improvement goals of the EMS have been developed through the LEAN Programme for Continuous Improvement. These are some of the environmental initiatives implemented in 2017:**

## IMPROVEMENT INITIATIVES (LEAN)

### GENERATION

**REDUCTION OF CONSUMPTION**

Analysis of the consumption in circuits of ancillary services in Agrupación Barca-Miranda.

**MINIMISATION OF ENVIRONMENTAL RISKS**

Reduction of the environmental impact in case of oil spilling in the COH circuit of the surge tank of La Riera.

**WASTE PREVENTION**

Application of the 5S methodology in the Workshop Warehouse.

**WATER CONSUMPTION AND WASTE DUMPING CONTROL**

- Monitorisation of the estuary and initiative to improve the use of waste water from the water basin processed in the Effluent Processing Plant of the Aboño thermal power plant.
- Centralisation of waste analysers no. 2 (tower) and n. 3 (waste) of the Soto de Ribera thermal power plant.
- Installation of a hydrocarbon detector in the discharge valve in Sidergas.

### DISTRIBUTION

**ENVIRONMENTAL MANAGEMENT**

Calculation of the carbon footprint corresponding to the substation and line department.

**PROTECTION OF BIODIVERSITY**

- Identification of protected trees in cutting and pruning works.
- Identification of avifauna species affected by collision or electrocution.

Another requirement of the new Standard is the **life cycle approach**. To this end, we have used the IHOBE Methodological Guide to apply the Corporate Environmental Footprint, which has been adapted to the reality of EDP's businesses. Such tool has allowed analysing the environmental impact of activities, taking into consideration not only the annual operation but also all the implications it entails both upstream (purchase of products and services) and downstream (final waste management and final impact of emissions and dumping on health and ecosystems).

### 3.3.2. CLIMATE CHANGE

#### COP23

The 23<sup>rd</sup> Conference of the Parties (COP23) to the United Nations Framework Convention on Climate Change (UNFCCC) was held in Bonn between 6 and 17 November.



**What is a COP?**

COP is the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC).

“Parties” refers to the countries that are signatories to the Convention.

**Although it took place at the same time of the announcement of the U.S. withdrawal from the Paris Climate Agreement, it has been a merely technical summit with three lines of work:**

#### WORK PROGRAMME

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Preparation of the rules to implement the Paris Agreement, mainly in terms of reporting, accounting and operation.

#### TALANOA DIALOGUE

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Facilitating dialogue to share good practices to reduce CO<sub>2</sub> emissions, to enhance the ambition of the National Contributions (NDC).

#### PRE2020 AMBITION

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To promote reaching the peak of emissions in year 2020 and subsequently reduce it.

PRE2020 Ambition and the Financing aspects, as a mechanism to help developing countries with regard to adaptation and mitigation, are the main hurdles of the process.

On one hand, PRE2020 Ambition requires ratifying the Doha Amendment, which would allow extending the Kyoto Protocol from 2012 to 2020 (the Paris Agreement would enter into force in 2020). However, up to date, it has not been possible to ratify it, since it requires 144 parties and only 110 have ratified it up to now.

As for the Financing, out of the annual 100,000 million dollars for 2020, only 41,000 million have been mobilised. USA announced that it will not provide the 2,000 million it has promised, but other countries such as Germany and Spain, which is already the fourth donor in the EU, have communicated their decision to raise their contributions.

**But there are also new initiatives:**

#### VULNERABILITY AGENDA

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It includes the First Gender Action Plan for the integration of women in climate change mitigation and adaptation policies, as well as the Local Communities and Indigenous Peoples Platform, which allows these communities to participate in the process in a more organised and direct way.

#### OCEAN PATHWAY PARTNERSHIP

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Initiative that aims to reinforce the inclusion of oceans in the UNFCCC process.

#### POWERING PAST COAL ALLIANCE

---

Alliance to eliminate traditional coal as an energy source before 2030 in the OECD and in EU-28, and before 2050 in the rest of the world, to achieve the Paris Agreement goals.

#### AMERICA'S PLEDGE

---

American companies, cities, states and institutions, which together add up to more than half of U.S. economy, have undertaken to reduce their greenhouse gas emissions between 26 and 28% by 2025, replacing the national target withdrawn by the current presidency.



**YOLANDA FERNÁNDEZ MONTES**

**Director for the Environment, Sustainability, Innovation and Quality**

“EDP participated in the United Nations Private Sector Forum in 2015, where it presented the company’s commitments to combating climate change (SDG 13) and to affordable and non-polluting energy (SDG 7). These commitments have taken the form of 5 goals: to reduce specific CO<sub>2</sub> emissions by 75% by 2030; contribute to the increase of production from renewable sources by more than 75% of installed capacity in 2020; offer customers sustainable products and services that contribute to greater efficiency in the final use of energy, achieving more than 1 TWh of accumulated savings by 2020; encourage collaboration in the research and development process for clean technologies, energy efficiency and smart grids, investing €200 million by 2020 and extending the installation of smart meters to 90% of the EDP Group’s low voltage customers in the Iberian Peninsula by 2030 as part of the new smart grid operating paradigm. These commitments are already very close to being achieved, so this year we will review them as part of a new Business Plan that will be finalised at the end of 2018.

Our satisfactory environmental performance has once again been demonstrated by obtaining the external certification for the environmental management systems, already adapted to the new ISO 14001:2015 requirements in distribution, sales and hydro power plants, and which will be completed throughout 2018 in the rest of the generation facilities.

Our attitude and commitment allow us to improve our performance every day, as evidenced by the almost 4,000 improvement initiatives implemented since the beginning of the LEAN programme.

In the Innovation area, we are collaborating with more than 200 innovative companies through the EDP Starter programme, in new project development possibilities in all the Group’s strategic R&D&I lines”.

**EU EMISSIONS TRADING SYSTEM (EU ETS)**

The new directive on emission allowances trade is a key element within the European strategy to move forward towards a decarbonised economy and meet the emission reduction goals of 2030.

The most significant points include the creation of two funds financed through emission allowances auctioning, the Innovation Fund and the Modernisation Fund, both aimed at facilitating the transition of various sectors to a low-carbon economy.

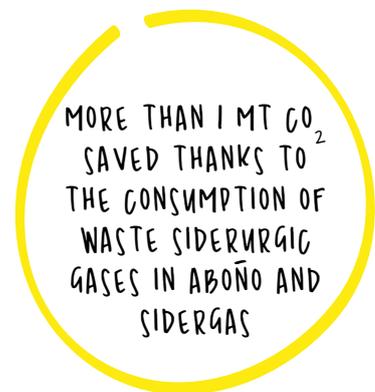
Likewise, it should be emphasised that this new directive regulates small emitters and maritime and aviation emissions, which were exempted up to date.

**Spanish law on Climate Change and Energy Transition**

At a national level, the procedures for drafting a law on climate change and energy transition have been initiated, as part of Spain’s efforts aimed at complying with the Paris agreement.

The purpose of the law is to define a medium- and long-term framework to guarantee an orderly transition to a low-carbon and climate-resilient economy, including specific objectives of reduced greenhouse gas emissions – road to decarbonisation by 2050 with a reduction between 80% and 95% with respect to 1990.

The process started with a debate session involving more than 400 experts and a general public consultation, where EDP Spain has taken an active role, both in the session as well as through proposals.



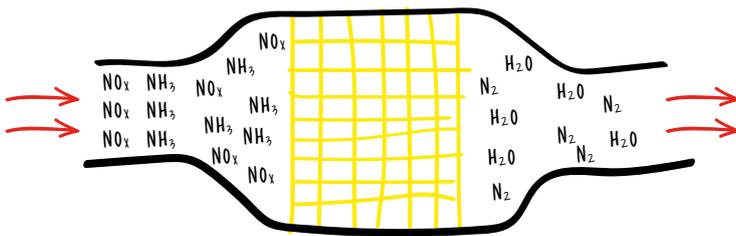
**3.3.3. POLLUTION PREVENTION**

In the first months of the year, the thermal power plant of Aboño has definitively started up the first denitrification plant of the Spanish thermal power plants, in its Group 2, and, subsequently, in May, it started the operation of the Soto de Ribera plant in Group 3.

Through these new equipment, nitrogen oxide (also known as NO<sub>x</sub>) emissions are being currently reduced by more than 60%, which makes these Groups operate below the emission limit values set out in the applicable regulation, but they could be adjusted to reductions around 80%.

The technology used, which is called selective catalytic reduction (SCR), is one of the best available techniques (BAT) identified in the BREF.

The technique consists in making nitrogen oxides go through a reactor, where, in the presence of an ammonia solution and on vanadium oxide catalysts, these are reduced resulting in water vapour and nitrogen.



**BREF**

On 17 August 2017, the European Commission published the Decision including the BREF for Large Combustion Plants (Best Available Techniques Reference Document).

This date marks the start of the maximum 4-year period to review, once again, the Integrated Environmental Authorisations to incorporate the Best Available Techniques (BAT).

The BREF will be reviewed every 8 years to ensure that the facilities are constantly adapted to the best environmental standards.

This investment, which amounts to a total of €90 million in both groups, Aboño 2 and Soto 3, ensures their future, contributing to the necessary diversification of the electricity production mix, thus providing security of supply in a competitive and environmentally friendly manner.

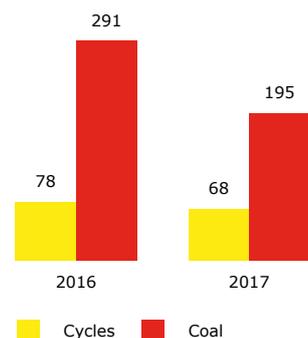
Furthermore, and as an entirely voluntary measure, in 2017, the supporting fuels used in Soto 3, which were diesel and fuel oil, have been replaced by natural gas, thus taking advantage of the synergies offered by having adjacent gas units.

The projected change has entailed, among other environmental measures, the reduction of CO<sub>2</sub> (25%), SO<sub>2</sub> (99%), NO<sub>x</sub> (27%) and Particles (97%) emissions in starting processes, a reduction in the production of hazardous waste and a decrease in the environmental risks related to the storage of liquid fuels.

Following this, Aboño 2 undertook the same project, which was concluded during the shutdown between January and March 2018, together with other works associated with an end-of-campaign review.

The use of natural gas in both Groups, Soto 3 and Aboño 2, entails numerous advantages both in terms of operation and maintenance, since it is a more operable and clean fuel that facilitates start-ups, since its combustion is much more stable than fuel oil and gas oil. These aspects are especially relevant given that the number of starts-ups has been significantly increased in recent years and it might rise in the future due to market needs. Currently, there are more than 195 start-ups per year.

**START-UPS**





**HC TUDELA COGENERACIÓN**

The HC Tudela cogeneration plant, located in the facilities of the Tudela Veguín cement factory in Aboño, has also benefited from the synergies of the gas supply in Aboño 2, given that, taking advantage of the construction of the gas pipeline for the supply of the power plant, the plant's supply system, which is based on liquefied natural gas (LNG) tanks, has been replaced by its direct connection to the gas pipeline thanks to the construction of its own regulation and measurement station.

This connection reduces the risks of the plant related to the transport and storage of LNG and improves its efficiency and flexibility.

**AIR QUALITY IN THE CONURBATION OF GIJÓN**

Air quality remains a relevant environmental issue, since high levels of suspended particles persist in certain areas of the western area of the Gijón conurbation, which is the reason why, in August 2017, the Principality of Asturias reviewed the "Air Quality Improvement Plan in the Conurbation of Gijón (ES0309)", in force since 2014.

Among other aspects, the affected area has been modified thereby, incorporating a part of the eastern area of the Carreño council and a total of 17 new measures that affect the industries in the area, city councils, regional ministry and population in general.

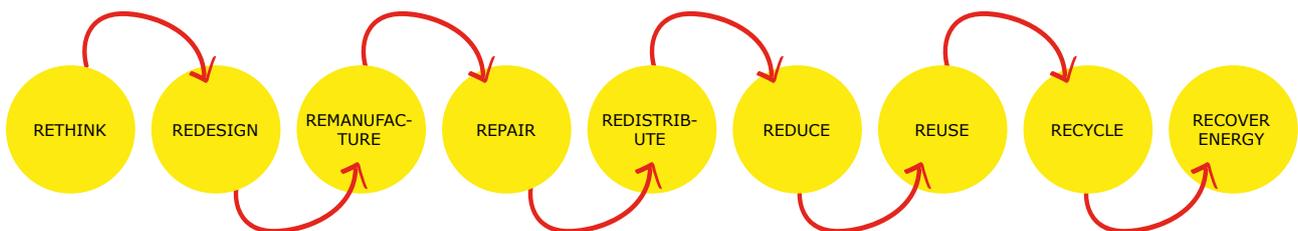
The regular monitoring of the plan is carried out in a committee in which the different agents involved are represented, including neighbourhood associations and others. EDP participates in this committee and has already implemented all the measures identified for the thermal power plant of Aboño.

**3.3.4. SUSTAINABLE USE OF RESOURCES**

The **7<sup>th</sup> European Week for Waste Reduction**, an initiative of the European Commission developed within the LIFE+ Programme and coordinated in Asturias by COGERSA, was held between 18 and 26 November.

In this occasion, the motto was **Give it a new life**, aiming at considering other options before discarding waste or an object that is no longer useful, such as reuse it, recycle it or donate it, so other people or groups can take advantage of it.

This approach involves moving from the traditional 3-"R" model (Reduce, Reuse and Recycle) to a new "multi-R" approach that opens multiple circular economy options: reintroduce waste in the market for a new use, thus reducing the consumption of materials and the environmental impact of operations.



EDP España supported this European initiative through two actions in order to give a new life to some of the waste generated. On one hand, used CDs were collected by the students of the La Magdalena high school (Avilés) for the construction of a greenhouse. And on the other hand, the recognised Asturian artist Israel Sastre has made the sculpture "Ulysses" by assembling different waste collected from the Electricity Distribution Area.



## WASTE MANAGEMENT

Circular economy is already a reality and companies have a lot to contribute in terms of efficient use of materials and waste management.

EDP España participates in the Project "SUBproducts4LIFE, reuse of industrial by-products and waste in innovative circular economy processes" aimed at the reuse of industrial by-products in soil decontamination.

The project is coordinated by the University of Oviedo and it aims to prove that certain by-products, such as blast furnace slags and desulphurisation gypsum, and waste such as fly ash and steelworks slags, can be efficaciously used for fixing heavy metals in contaminated soils, thus preventing groundwater contamination.





### 3.3.5. PROTECTION OF BIODIVERSITY



Learning about the natural resources in the surroundings of *EDP España's* facilities is a priority which responds to the Biodiversity Policy of the EDP Group and is essential within the scope of Environmental Responsibility.

Most generation facilities of *EDP España* are located in protected areas, being the biodiversity present in the “water” resource fundamental for cataloguing their habitats. For this reason, for several years now, we have been carrying out volunteering ecological characterisation works in Nalón (Soto de Ribera thermal power plant) and Ebro (Castejón thermal power plant) rivers and campaigns to follow up the environmental potential of the reservoirs in the hydro power plants, all of them located in Asturias.

**The biological communities studied are key indicators for assessing the condition of water bodies. Some examples:**



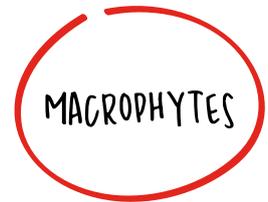
With species such as the brown trout, the minnow, the cobitis paludica...



Such as molluscs, crustaceans, coleoptera, etc.



Indicators of organic pollution and anthropogenic eutrophication.



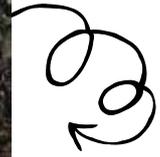
Indicators of the state of the riparian forest including the identification of invasive species.

Additionally, a study has been also conducted on the state of preservation and monitoring of protected species in the environment of the Nalón Special Preservation Area in the area (ZEC, in Spanish) of influence of the Soto thermal power plant, including the condition of the main habitats and the presence of protected fauna and flora species Red Natura 2000. Among others, heathlands, *Alnus glutinosa* and *Fraxinus excelsior* forests, and *Quercus ilex* and *Quercus rotundifolia* forests have been analysed and the presence of protected species such as the otter has been verified.

Within the same line, the monitoring of natural communities and protected species in the coastal environment of the Aboño plant is conducted on an annual basis, including the monitoring of benthic, intertidal and phytoplankton communities and the sighting of emblematic species such as the cormorants. This monitoring, together with the cartography of the habitats present in the immediate marine environment, complete our knowledge about the Plant's environment.

The aforementioned works, together with other relevant documentation from official sources and recognised scientific institutions, have been compiled into a tool developed by *EDP España* on a georeferenced information system (GIS) that enables the display of all the information related to natural resources and the services they provide.

Biodiversity is also a key aspect in the electricity distribution activity both in the design phase and in the construction and maintenance of power lines.



Thus, the annual planning of cutting and pruning works is prepared with the support of a GIS System that includes the relevant environmental information, which takes into account the following:

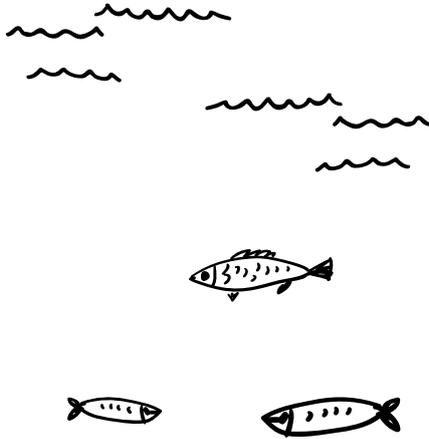
1

The distribution range of protected species such as the brown bear or the capercaillie, in the case of Asturias, and the bearded vulture in Aragón, taking into consideration the critical areas for these species in which the alteration of their habitats could be relevant for their preservation.

2

Forests included as priority habitats of community interest, such as the riparian forest, the preservation of which requires maintaining natural shady conditions and its natural continuity.

So far, these actions have not caused any relevant impact.



Other significant aspect is the avifauna, due to the high risk of collision and electrocution in overhead power lines.

According to the legal framework, the Ministry of Agriculture and Fisheries, Food and Environment is responsible for arranging all the appropriate mechanisms and budgets that may be necessary to finance projects for the adaptation of lines in Special Protection Areas for Birds ("ZEPA", in Spanish).

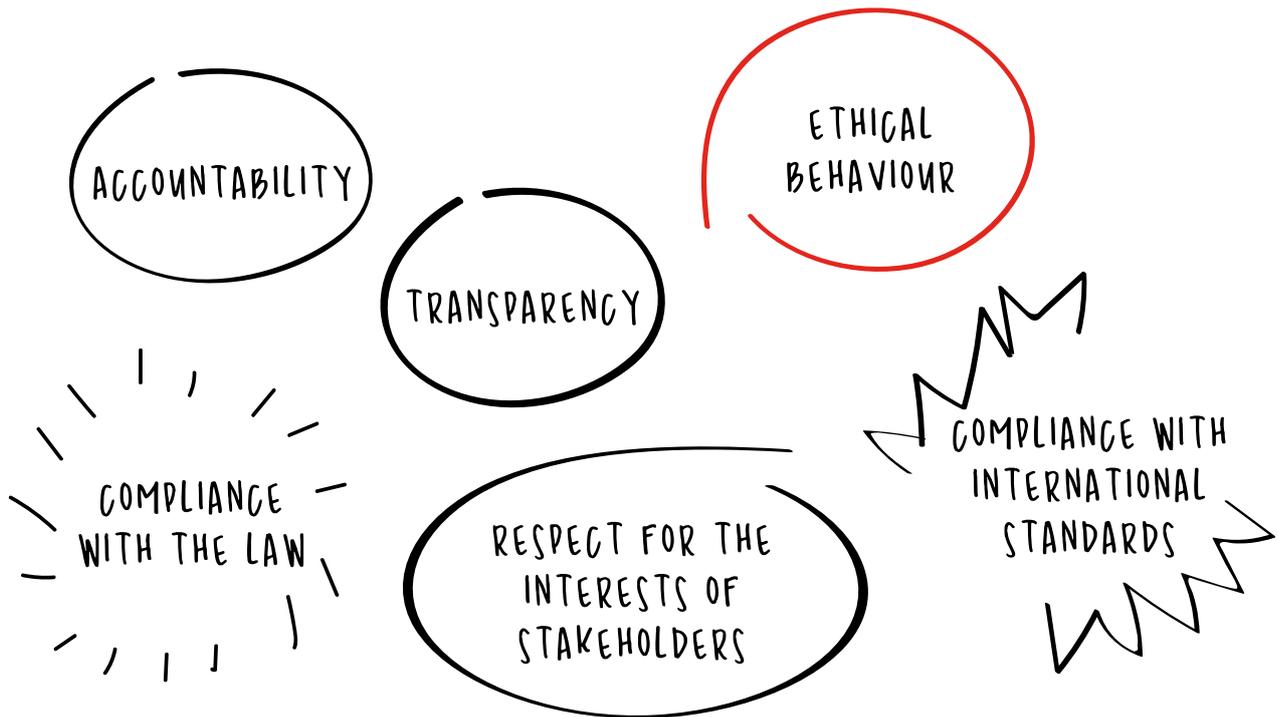
In 2017, *EDP HC Energía* reported the Inventory of lines in Asturias and Aragón, as well as the avifauna incidents, stressing that, up to date, no relevant episodes involving protected species have been documented.



### 3.4. ETHICAL CONDUCT

#### 3.4.1. CODE OF ETHICS

As a socially responsible company, EDP ensures the correct integration of ethical criteria in the development of its activity.



For this purpose, it has several policies, codes and internal regulations, which are inspired in the best international practices, protocols, codes of conduct and guidelines applicable in each matter.

In 2005, EDP published its first Code of Ethics. The publication of this Code, approved by the Executive Board of Directors and the General and Supervisory Board, strengthens the commitment of each employee of the EDP Group and its suppliers with the principles of action set out therein.

EDP has a reporting channel, which employees can use to confidentially inform the company about possible breaches of the general code of conduct or about breaches they notice in the performance of their professional duties.

EDP IS CONSIDERED  
AN ETHICAL COMPANY  
BY ITS SUPPLIERS  
(INDIVIDUAL  
INTERVIEWS)



**JOSÉ LUIS MARTÍNEZ MOHEDANO**  
**General Secretary and to the Board of Directors**

"In 2017, I would highlight the measures adopted to review and update the Prevention of Criminal Legal Risks Model (criminal liability of legal persons).

After the audit conducted by Deloitte, the corresponding resolutions have been adopted in *EDP España SAU*, the EDP Branch in Spain, and the EDP Foundation, which approve the new Model Standard, its Supervision and Monitoring Basic Guide, the risk and control Matrix and the new Professional Control Body (Compliance Officer) comprised by the Internal Audit and Compliance Director, the Legal Advice Director and the General Secretary.

In this context, the adhesion to the Reporting Channel of *EDP España* has also been updated and the resolutions of the management bodies of *EDP España's* subsidiary companies have been formalised, adhering to the new Model.

Likewise, special mention should be made of the fact that we have been finally able to formally change the corporate name of the parent company of the Group, which has been renamed *EDP España SAU*".



**PELAYO ECHEVARRÍA YBARRA**  
**Legal Advice Director**

"In 2017, we should highlight the total interaction of both the team of lawyers of EDP Spain and external lawyers with the litigation management tool (EDP Juris), achieving the overall integration of litigations with the General Secretary's office.

As for the significant milestones, the sale of *EDP Naturgas Energía* involved a significant effort to accompany the divestment transaction from the beginning, both in the Due Diligence stage as well as in the negotiation and signing of the purchase agreement, the conclusion and the subsequent monitoring of the performance of temporary service agreements. In this respect, 2017 also concluded with the restructuring of the Legal Advice Department with regard to its composition and organisation of duties and responsibilities, given the departure of professionals linked to the gas industry.

Furthermore, a scorecard to monitor the main Legal Advice magnitudes and indicators – among which we should mention the management of bankruptcy proceedings, B2C and B2B debts, administrative procedures, and labour and criminal matters – has been consolidated, and 2017 concluded with a total of 9,685 open judicial records".

### 3.4.2. DATA PROTECTION

#### NEW GENERAL DATA PROTECTION REGULATION

The new regulation on data protection (hereinafter, the GDPR) in force since 25 May 2016 will apply from next 25 May 2018. The GDPR, which overrides the previous laws on personal data, reinforces the rights of data subjects and the obligations of the companies that, in the development of their business, process personal data. The privacy and protection of these data are fundamental rights of data subjects, who are more and more aware and sensitive to the fact that they have rights that must be safekept.

#### WHICH ARE THE REGULATION PRINCIPLES THAT EDP MUST GUARANTEE?

##### PROACTIVE RESPONSIBILITY

Proving the adoption of the necessary guarantees for correctly processing personal data according to the risk and the impact on data subjects.

##### SECURITY

Data processing carried out in a secured way, through technical and organisational measures.

##### DATA QUALITY

EDP shall guarantee the **accuracy and update** of the data whenever possible.

##### PRIVACY BY DESIGN AND BY DEFAULT

Adoption of the principles of **data protection by design** (from the conception of a specific processing activity) and **by default** (principle of **minimisation** of used data).

##### TRANSPARENCY

The **information** provided to the Data Subject must be concise, transparent and easily accessible, always using clear and plain language.

##### MINIMISATION

Processing the smallest volume of data by the lowest number of people and stored for the minimum time possible.

##### LAWFULNESS OF THE PROCESSING

The processing will be lawful insofar as the data subject has given his/her consent or where it may be necessary for: performing a contract, complying with a legal obligation, defending vital interests, exercising functions of public interest or the legitimate interest of the data controller.

#### WHICH ARE THE NEW OBLIGATIONS FOR EDP AS DATA CONTROLLER?

##### INVENTORY PROCESSING ACTIVITIES

The obligation to **register** all the processing activities before the Supervisory Authority (AEPD) no longer applies, but the obligation to internally **inventory** the conducted **processing activities** does.

##### SECURITY BREACHES

Reporting **security breaches** to the supervisory authority, within 72 hours maximum, and in some cases to the data subjects.

##### RISK ASSESSMENT/ DPIA

Obligation to carry out risk assessments for the processing activities/data protection impact assessments (DPIA) where the risk is high.

##### SUPPLIERS OF SERVICES

**Data processors** (Suppliers with access to personal data) must provide adequate guarantees for the processing/**adjustment** of contracts to access data.

##### TECHNICAL AND ORGANISATIONAL MEASURES

Implementation of **technical, organisational and control measures** guaranteeing a **protection level in accordance with the risks**.

EDP is bound to appoint a DPO (DATA PROTECTION OFFICER) responsible for the main duties of advising and monitoring data protection matters.



## EDP'S ADJUSTMENT TO THE REGULATION

In financial year 2017, EDP started a set of actions aimed at adjusting its procedures, processes and information systems, in order to reinforce the compliance mechanisms concerning data protection, adjusting them to the GDPR requirements. Likewise, awareness and training actions for employees and collaborators have been planned throughout this project.

All these measures strengthen EDP's commitment to:



### **AZUCENA VIÑUELA** Internal Audit Director

"Coverage of the main risk areas and new areas of activity were the main action areas in both the Internal Audit and Compliance spheres.

Thus, as regards Internal Audit works, among others, the supervision of relevant investment processes, technological evolution, safety and cybersecurity, support services for customer care processes and the connection and monitoring of outsourcing activities were major action areas in 2017.

In relation to Compliance management systems, as well as maintenance and updating of management systems developed in previous years, such as the Prevention of Criminal Legal Risks Model, for example, concern about personal data privacy and adaptation to the new European Data Protection Regulation was an area of special attention. The main new feature included in the European Regulation is the principle of companies' proactive responsibility, which led to the development of a cross-cutting project in order to systematise the implementation of a management model. The model involves implementing and monitoring actions in organisational areas, in operational areas in the business processes affected, in technology, especially with regard to information systems supporting data processing, in the security mechanisms implemented and in legal and formal areas. Relationships with our service providers, as well as training and awareness-raising activities for company collaborators, especially those not only as a series of obligations to be fulfilled but also as an opportunity to improve customer service through a renewed commitment to trust and relations".

**3.4.3. DIVERSITY/EQUAL OPPORTUNITIES**



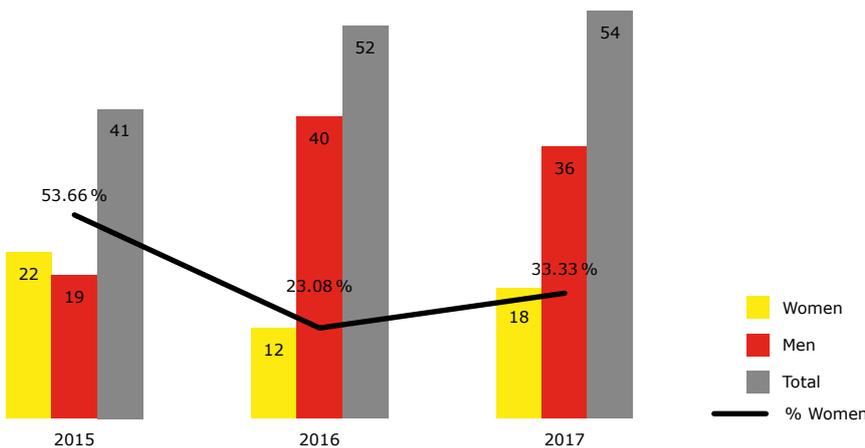
The diversity/equal opportunities matter is progressing in the EDP Group, in which non-discrimination based on gender is included in the Collective Bargaining Agreement and in the Code of Ethics, among other documents.

These documents contain specific measures regarding equality, family, personal and professional life balance measures, moral, physical and sexual harassment or for gender reasons, protective measures for victims of gender-based violence or disability matters, with a focus on equal treatment and removal of barriers.

The Diversity 2017 goal to attain “30% of women employment in the recruitment processes for senior positions or increase the latter by 10% with respect to year 2016” was set as target.

The goal has been attained, since 11 women out of a total of 35 recruitments in Specialists and Managers positions were hired. This goal is maintained for 2018.

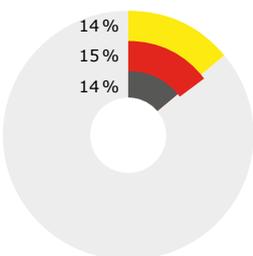
**EQUAL ACCESS TO EMPLOYMENT**



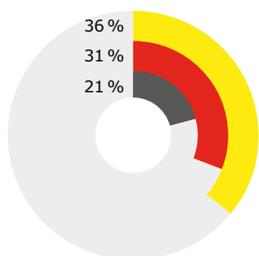
In 2017, 54 people were hired, out of which 18 are women, which means a 50% increase with respect to 2016.

The variation in 2017 is connected with the sale of the gas distribution assets.

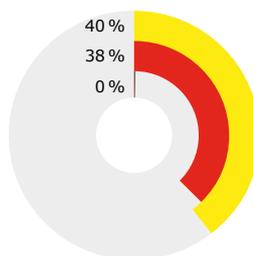
**WOMEN IN SENIOR MANAGEMENT POSITIONS**



**PROMOTED WOMEN**



**PROMOTED WOMEN IN UNDER-REPRESENTED POSITIONS**



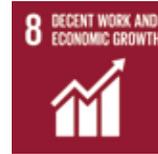
■ 2015 ■ 2016 ■ 2017

Likewise, the topics related to diversity and equal opportunities will be maintained in the negotiation process of the new Collective Bargaining Agreement, and the Equality plans in force in the different companies of the Group are planned to be reviewed and updated in the same process.



**3.4.4. SUPPLIERS**

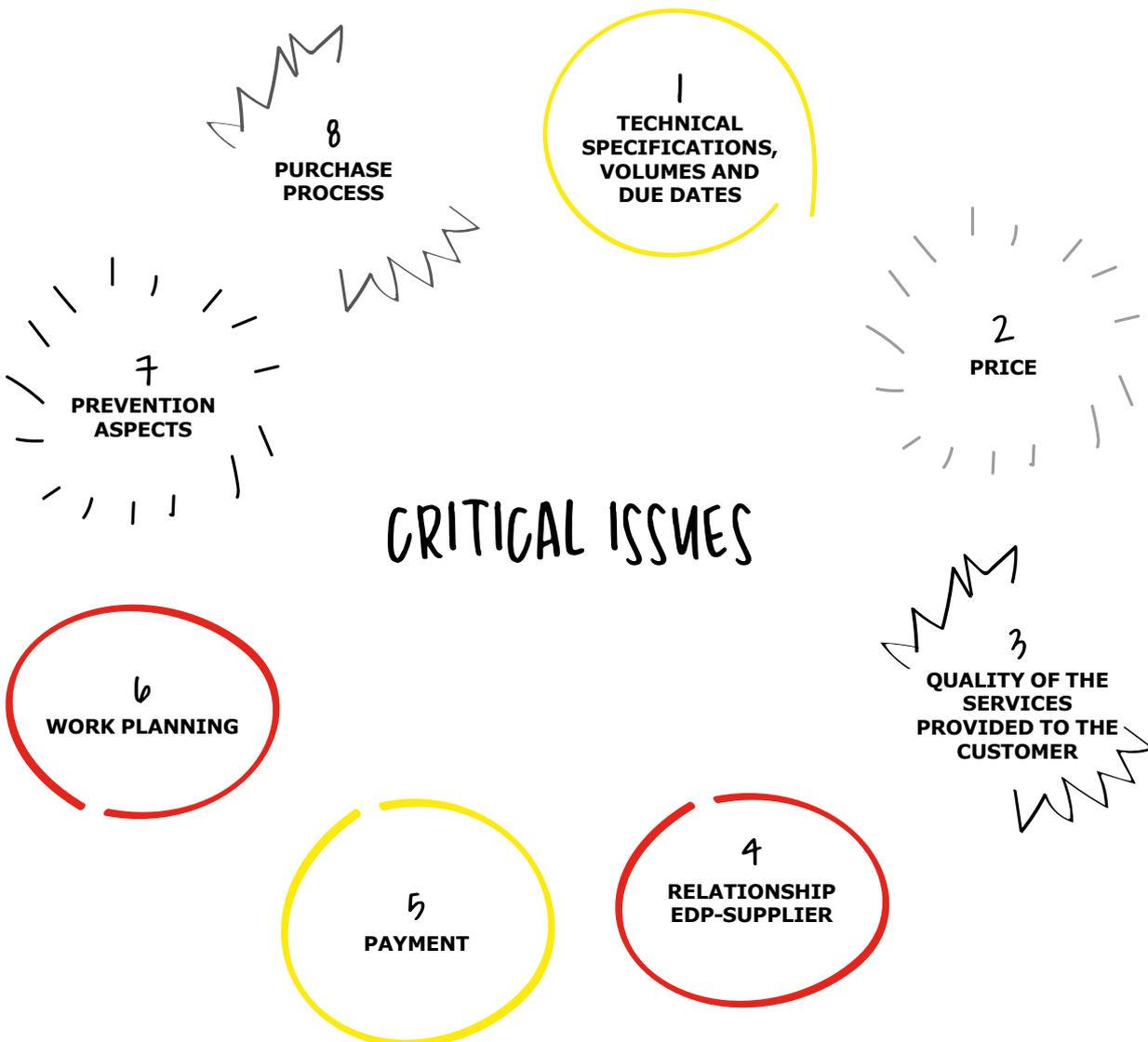
EDP España maintains relationships with more the 8,000 suppliers, based on ethics, transparency and mutual respect and ensuring the quality of services.



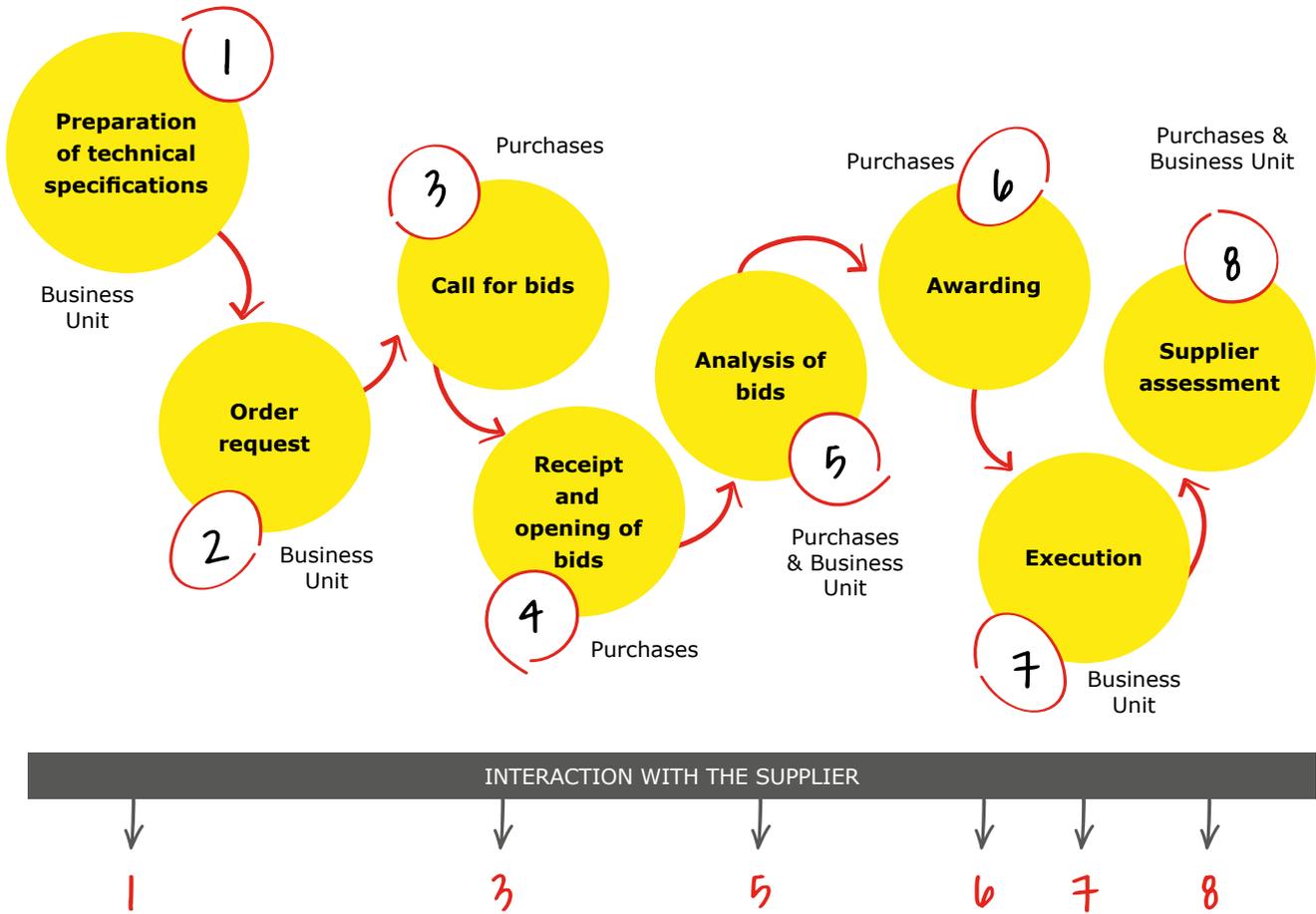
EDP España’s suppliers are a group that, given their involvement in the Group’s goals and their habitual collaboration with different sectors of the company, must be listened to and understood.

Thus, in 2017, 35 personal interviews were conducted with suppliers of EDP España selected by the managers of generation, electricity and gas distribution, and retailing business.

Their concerns and suggestions were assessed and a summary of their main concerns was made, resulting in the following critical points:



The purchase process was fully analysed, from the preparation of the technical specifications to the execution and the supplier assessment, putting special emphasis on all the stages which involve interaction with the supplier.



An action plan to correct and improve our suppliers' expectations was prepared and it will be carried out in 2018.

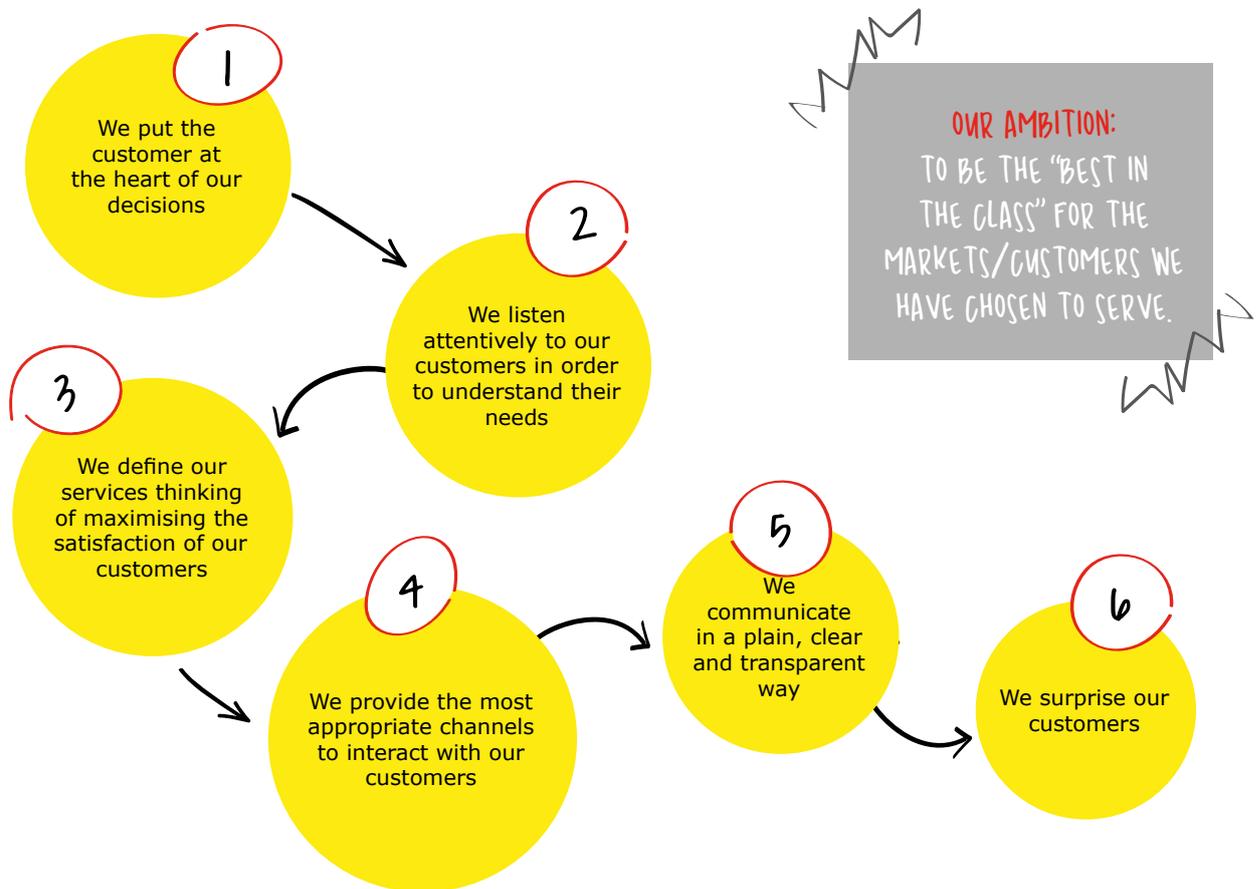




### 3.5. CONSUMER AFFAIRS

#### 3.5.1. FAIR CONTRACTUAL PRACTICES

EDP’s vision consists in building a strong relationship with customers, getting ahead of their needs and expectation at all moments of contact and acting according to the values of the EDP brand, which are outlined in the following principles:



In order to guarantee the maximum customer satisfaction, campaigns and door-to-door (D2D) sale forces are exhaustively monitored and controlled, and EDP’s qualified staff verify 100% of the applications started by this procedure.

In 2018, EDP will apply the “10 Rules for Good Practices”, which will include commitments such as offering a tight price certified by the CNMC, arbitration by Consumer Affairs or the possibility to withdraw without cost or minimum term commitments, all of which will be explained in a simple language reflected in a new clear and simple bill.



*edp's*  
COMMITMENT TO  
THE CUSTOMER

1

TIGHT PRICE

We will always propose you a good price, which is ranked in the first positions in the comparative index of the CNMC, and which you may consult at all times: on our website or calling the EDP line.

2

WE ADVISE YOU

Our agents are highly-trained specialists who will solve any of your doubts or queries.

3

WE WILL HELP YOU TO SAVE

Because we want to help you to reduce your electricity consumption and we will propose you offers and discounts which will be adapted to what you really need. You will always have more than one plan to decide which one suits you best.

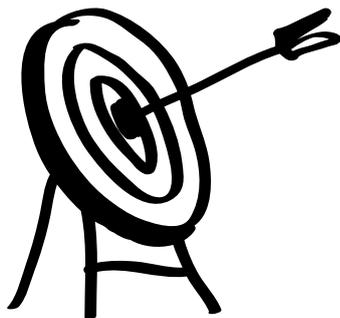
4

YOU ARE FREE TO CHOOSE

We want you to know it and do it. Our doors are open to you.

Our sales always involve verification. If you regret your contract, you can easily withdraw, without costs and problems

We will not hinder you if you want to leave. Our offers for your home do not entail penalties for minimum term commitments. You will pay only what you use and only while you maintain your contract. As for your business, if we offer you a plan requiring a minimum term commitment, you will always have the option to choose another one that does not require it.





5

### WE WANT TO BUILD A BETTER WORLD

---

Somos Sostenibles porque la electricidad de todos los hogares a los que suministramos es 100% renovable.

Somos Solidarios porque, con nuestra Fundación, participamos en causas sociales dirigidas a favorecer a colectivos vulnerables y en riesgo de exclusión.

6

### IF WE IMPROVE, YOU IMPROVE AS WELL

---

We share with you the savings in our processes. [Opción@Click](mailto:Opción@Click)

7

### OUR MISTAKES ARE OURS AND WE UNDERTAKE TO SOLVE PROBLEMS

---

If we make a mistake, we own to it and remedy it. We have adhered to consumer arbitration.

8

### WE SPEAK YOUR LANGUAGE

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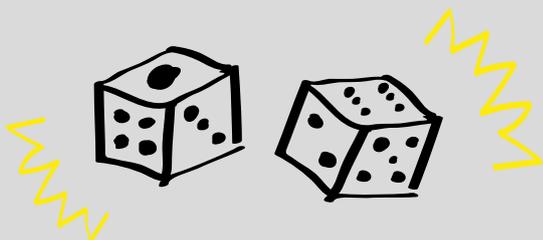
We use a plain language and we explain you anything you do not understand. The terms of our contracts are clear and readable. We send you a clear and simple bill with well differentiated items.





## EXECUTIVE SUMMARY

EDP is comprehensively renovating all its sales offices in Spain, for which it has been taken into account customer experience in terms of both the physical part of the office and the procedures to be carried out. This new project has several objectives that are included within the edp365 customer strategy: greater proximity and differentiation with customers, greater flexibility and efficiency, fostering product and service communication with innovative spaces and media with a digital focus and, most importantly, achieving excellence in customer care, paying attention to the customer experience.



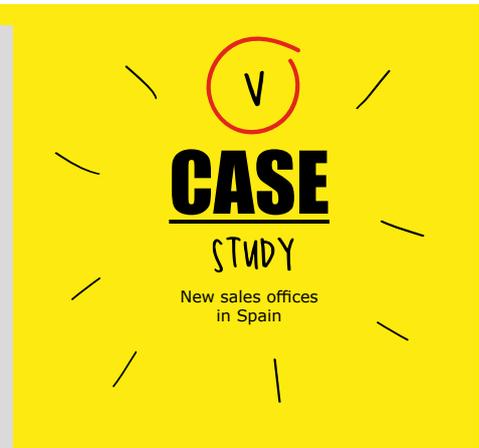
## CONTEXT

*EDP España* had its own network of on-site and off-site customer care offices as a result of historical developments and asset purchase processes, with a completely heterogeneous image and timetable. Moreover, to the different realities of each region is added the demand for offices in expanding areas to create customer loyalty.

Sales offices must serve as a communication channel to transmit EDP's values and messages to customers (products, existing channels, available services, free telephone line, etc.). In this context, the image of the offices and that of the people who work therein are how EDP is reflected in society, which is the reason why the new office model is committed to placing the Customer at the centre of all decisions, through a completely renovated, more flexible and competitive network, with increased proximity.



IMPROVING CUSTOMER EXPERIENCE AND TRANSMITTING THE VALUES OF OUR COMPANY – THE CHALLENGE OF OUR NEW SALES OFFICES



**SOLUTION ADOPTED**

Between 2016 and 2017, *EDP España* has been making improvements to the Sales Offices in its network to place the customer at the centre of all its activities.

The first spaces to open their doors were the offices in Murcia and Gijón, in April 2016, and the process concluded with the opening of the new office in Barakaldo, in December 2017. The group of renovated offices amounts to 11 in total, involving an investment of one and a half million Euros to date, as contemplated in the strategy for review of the onsite Customer Care channel.

The new sales offices have differentiated spaces and innovative communication media, basically with a customer care lounge and a digital space, which includes kiosks and areas with tablets to access different company contents, such as the new edponline customer area. Furthermore, elements such as accessibility, piped music, free Wi-Fi or the scent marketing system also help to make the stay more pleasant and provide the best customer experience in the office.

One of the company's commitments is also of particular importance: a new queue manager through a host that proactively receives customers on entry and, with the help of a tablet, characterises the customer and facilitates their identification in the lounge, where they will be received by customer care staff.

The new EDP offices have been designed to transmit the company's values and to meet customers' expectations. Each building and decorative element in the store is designed to improve the customer's habitability in their new space.

The project is in line with the company's strategy of investing in customer care channels to be closer to the customer, with the challenge of (i) balancing office network coverage nationwide and (ii) reinforcing omni-channel and customer experience strategies.

**RESULTS**

The sales offices, which have the highest level of customer-perceived quality of all the customer care channels, have seen their high rating reaffirmed in the first months of operation of the new model, featuring an improvement in the main service levels and management indicators.

**NEXT STEPS**

The opening of the sales office in Barakaldo (Vizcaya) will act as a pilot office and will lay the foundations for the decision on future openings in Getxo and Irún. Barakaldo, with more than 100,000 inhabitants, is the most populated municipality in Vizcaya after Bilbao and the fourth largest in the Basque Country, just behind the provincial capitals.

Furthermore, a pilot project outside the usual business areas is planned in the first few months of 2018 in expanding areas, by opening two new pilot offices in Valladolid and Getafe (Madrid).

**3.5.2. SUPPORTING VULNERABLE CUSTOMERS**

Last 6 October 2017, the Government passed a new Royal Decree regulating the application of the electricity social discount for vulnerable consumers.



**SOCIAL DISCOUNT RATE**

The social discount rate is a discount in the electricity bill for which household consumers may apply according to their income level and certain personal circumstances. The discount in the electricity bill is 25% for vulnerable consumers, 40% for severely vulnerable consumers and 100% if they are also being cared for by the social services. Likewise, it establishes a mechanism to avoid power cuts in the case of vulnerable consumers at risk of social exclusion.



**VULNERABLE CONSUMERS**

A consumer is considered vulnerable if the annual income of the family unit is below certain thresholds, which vary according to the size of the family. The threshold is increased in the case of people with disabilities and victims of gender-based violence or of terrorism. Households comprised by pensioners with minimum pensions and all large families will be also considered vulnerable consumers.



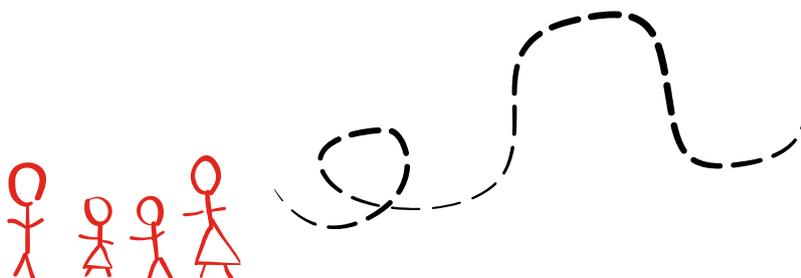
**SEVERELY VULNERABLE CONSUMERS**

The discount is increased up to 40% for severely vulnerable consumers, which are those whose family income is below half of the thresholds established for vulnerable consumers.



**CONSUMERS AT RISK OF SOCIAL EXCLUSION**

The severely vulnerable consumers that are being cared for by the social services of a Regional or Local Administration financing at least 50% of their bill, due to their special protection, will be considered consumers at risk of social exclusion. For this group, electricity retailers shall assume the remaining amount of the bill and they may not proceed to cut the power in case of default. In these cases, a mechanism is established so that electricity retailers make an additional financial contribution to prevent power cuts.



IT ALSO ESTABLISHES SPECIFIC MAXIMUM LIMITS FOR ELECTRICITY CONSUMPTION TO WHICH THE SOCIAL DISCOUNT RATE WILL BE APPLIED IN ORDER TO GUARANTEE EFFICIENCY IN ENERGY CONSUMPTION



IT ALSO ESTABLISHES SPECIFIC MAXIMUM LIMITS FOR ELECTRICITY CONSUMPTION TO WHICH THE SOCIAL DISCOUNT RATE WILL BE APPLIED IN ORDER TO GUARANTEE EFFICIENCY IN ENERGY CONSUMPTION

Retailers are bound to communicate defaults within a maximum period of two months, in order to prevent the accumulation of delayed payments that may not be noticed by consumers. In the case of vulnerable consumers, the period to cut off supply is extended from two to four months from the default. Moreover, in case of default, electricity companies shall inform consumers about the possibility to apply for the social discount, without assuming costs for the change of contract.

In order to check the income requirements, a computer application is available to verify the information available at the Spanish Tax Agency.

The economic impact of this measure in Spain is estimated at 236 million Euros and the number of beneficiaries is approximately 2.5 million households.

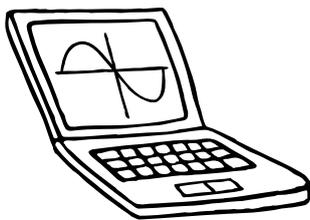
### 3.5.3. SMARTER GRIDS PREPARED FOR THE ELECTRIFICATION OF CONSUMPTION



The InovGrid project was implemented in Spain in 2013 and, by the end of 2017, it reached a high degree of progress with around 610,000 smart meters replaced and 6,500 DTCs installed, representing 94% and 98% of the overall equipment, respectively.

In parallel to the installation of smart equipment in the distribution grid, tools have been developed for the digitisation of the grid management, such as real-time alarms and troubleshooting of low- and medium-voltage failures, asset management based on real use, web portal on which customers can check their actual hourly consumption.

This digitisation has already brought internal benefits, with real-time alarms and greater speed in troubleshooting incidents in the low- and medium-voltage grid, and also for customers, who are able to better manage their consumption on *Mis Consumos* website, by having access to their actual data regarding both consumption and actual demanded power.



## DIGITISATION FOR A FASTER TROUBLESHOOTING OF INCIDENTS IN THE GRID

### LOW-VOLTAGE FAILURE TROUBLESHOOTING BY CALLS TO METERS

Before, we **always had to go** to the house of the customer making the call and locate the failure.

Now, we establish **remotely** if the failure is in the customer's installation ... thus avoiding 1,100 repair visits / year (- €0.2 million).

... or in the LV distribution grid, helping to locate it.  
**30 minutes less per incident.**

### MEDIUM-VOLTAGE FAILURE DETECTION

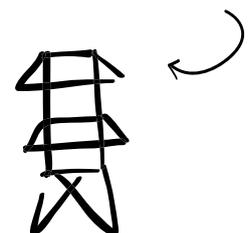
Several types of failures that were not detected until the customers' call.

The new information available makes it possible to have a warning alarm...

... and limits the failure location area.

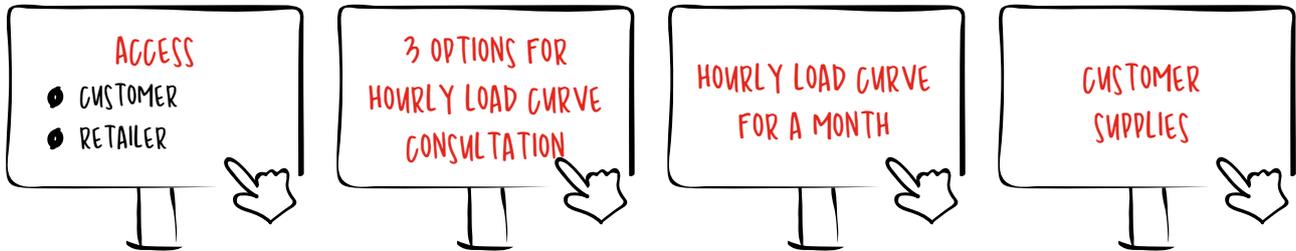
**Estimated TIEPI gain: 3 minutes per year.**

THE CUSTOMER NOTICES THAT SUPPLY DISRUPTIONS ARE SHORTER





DIGITISATION TO PROVIDE MORE INFORMATION TO THE CUSTOMERS ON "MIS CONSUMOS" WEBSITE



INFORMATION TO MANAGE YOUR CONSUMPTION

[www.edphcenergia.es/misconsumos/](http://www.edphcenergia.es/misconsumos/)



AVAILABLE	PROJECT
Load diagram of invoiced periods.	Instantaneous power values.
Hourly load curve for previous day D-1.	Incidents in the grid (scheduled and unforeseen).
Maximum power demanded.	

Likewise, we have started monitoring the low-voltage grid, which will enable the connection of domestic photovoltaic power plants and facilitate the implementation of the electric vehicle.

**WE ARE DEALING WITH A GRID THAT CAN BE ALREADY DEFINED AS SMART, INVOLVING CLEAR BENEFITS IN THE FUTURE:**



It will enable serving increasingly technological and demanding customers.

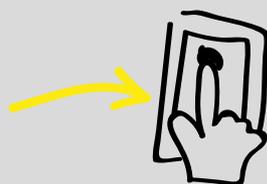
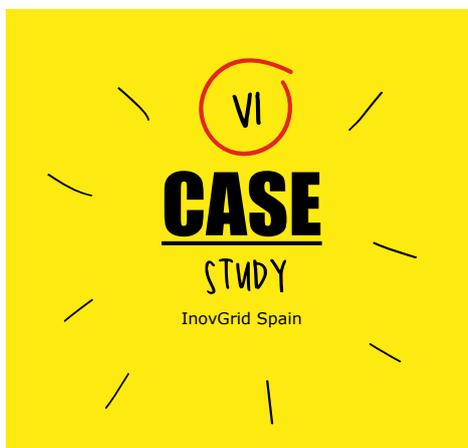


It will enable the incorporation of significant amounts of power from small generating units (self-consumption) and their optimisation by using batteries.



It will foster the popularisation of the electric vehicle.

### 3.5.4. 3.5.4. ELECTRIFICATION OF THE DEMAND



LEADING THE TRANSFORMATION IN  
ELECTRICITY DISTRIBUTION IN SPAIN  
THROUGH THE DIGITISATION OF EDP HC  
ENERGÍA GRIDS

#### EXECUTIVE SUMMARY

Based on the legal obligation to replace all type 5 measure equipment (contracted capacity <15 kW) with others allowing time differentiation rates and remote management, *EDP HC Energía* has developed the InovGrid project. Through this project, not only it has carried out the implementation, commissioning and operation of the new remote measurement and remote management equipment, but it has also developed applications to improve the operations of the power grid and provide customers/retailers with information about consumption to allow savings (Mis Consumos website, [www.edphcenergia.es/misconsumos/](http://www.edphcenergia.es/misconsumos/)).

#### CONTEXTO

Order ITC/3860/2007, of 28 December, by virtue of which electricity tariffs are reviewed as of 1 January 2008, subsequently amended by Order IET/290/2012, of 16 February, sets out the obligation to replace all type 5 equipment (contracted capacity <15 kW) with equipment allowing time differentiation rates and remote management by 31 December 2018.

*EDP HC Energía* wanted to go further and optimise the new infrastructure by using it for other purposes to improve the operation of the electricity distribution grid and to provide customers/retailers with more and better information on consumption enabling energy savings, distributed generation and the deployment of electric vehicles.

#### SOLUTION ADOPTED

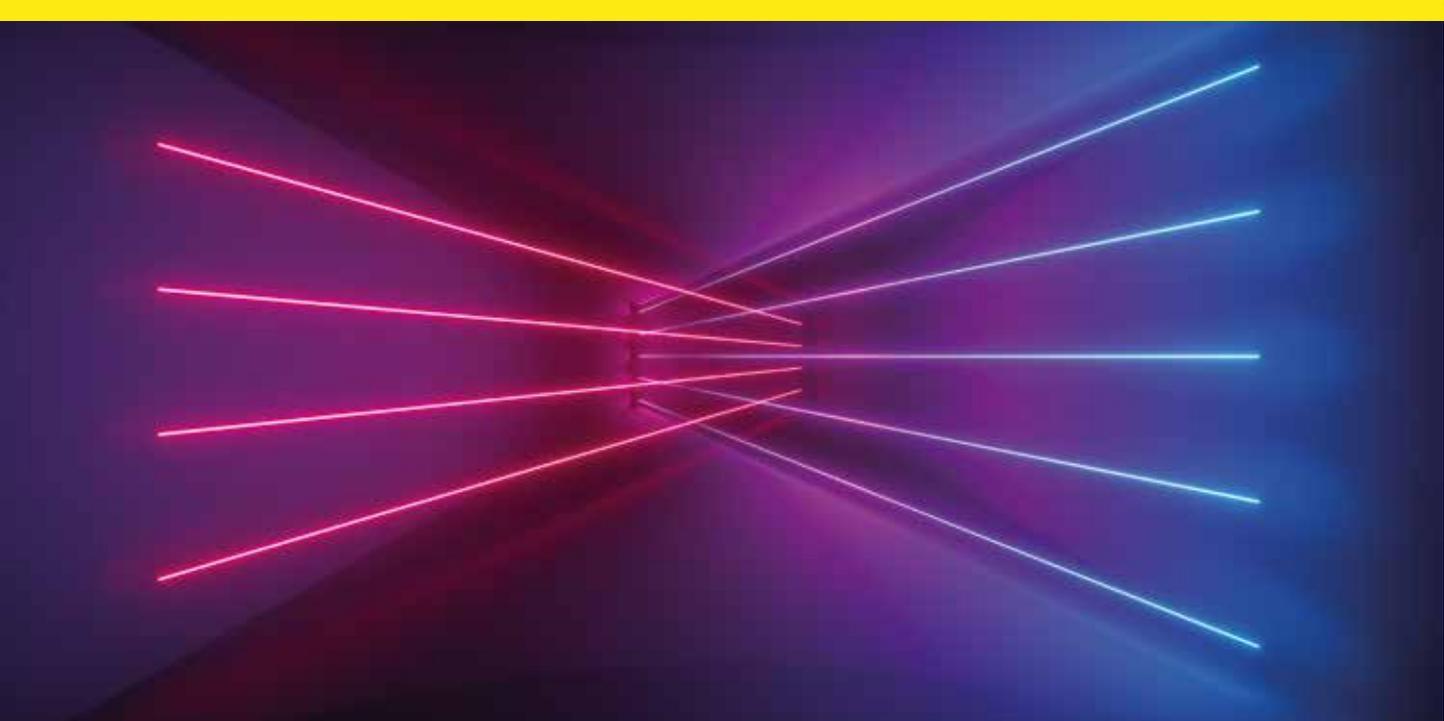
Through the InovGrid project, *EDP HC Energía* has established the basis for improving asset management, service quality and information support to customers and, thanks to these milestones, it can be said that EDP is leading the transformation in electricity distribution in Spain.

On one hand, the plan for the replacement of traditional meters with remotely managed devices, the so-called smart meters, has been implemented. In 2017, this replacement reached 608,897 meters (94%) and it is expected to be concluded in April 2018, 8 months before the deadline established by the government.

Additionally, 6,500 concentrators have been installed. These are devices that enable the connection and transmission of data between the meters and the central services of the company, which really allows us to talk about "digitisation of the grid".

This digitisation gives increased control on the installation load, which minimises the risk of overloads, allows us to be faster in the resolution of incidents in the grid, and improves the information supplied to customers.

Finally, EDP's pioneering incorporation of the low-voltage grid in the systems will in the long term enable the incorporation of distributed generation and the deployment of the electric vehicle.



## RESULTS

As it has been indicated, up to date, 94% of the meters have been replaced and 7,000 concentrators and TCP/IP communications equipment have been installed to monitor the grid.

Furthermore, the security in the management of the grid has been improved by using sensors in the transformation centres featuring 4 alarms (Intrusion, Fire, Flood and Temperature) and video surveillance camera.

And, finally, the improvement in the operational efficiency has been translated into a reduction in costs:

- LV failure troubleshooting: avoids 1,100 repair visits/year, which involves savings of 0.2 million Euros, and reduces the average time per incident by 30 minutes.
- MV failures: the new information available allows to have a warning alarm which limits the failure location area, resulting in an estimated TIEPI gain of about 3 minutes/year.

## LOOKING AHEAD, THE DIGITISATION AND IMPROVEMENT OF GRIDS WILL CONTINUE WITH THE FOLLOWING IMPROVEMENTS:

1. Installing new alarms in the LV grid:
  - Neutral loss alarm.
  - Over and under voltage alarm.
  - LV cut-out phase alarm.
2. Failure prediction through Machine Learning.
3. Fraud detection through data analysis.
4. Progressing in the advanced monitoring of the LV grid:
  - Being prepared for the challenges involved by the growth of distributed generation and electric cars.
5. Going deeper into tools for asset management and quality of service.
6. Improving the information provided to customers connected to our grids.

### 3.5.5. SUSTAINABLE MOBILITY

Europe is committed to reduce greenhouse gas emissions, strengthen competitiveness and guarantee energy security, decreasing external dependence.

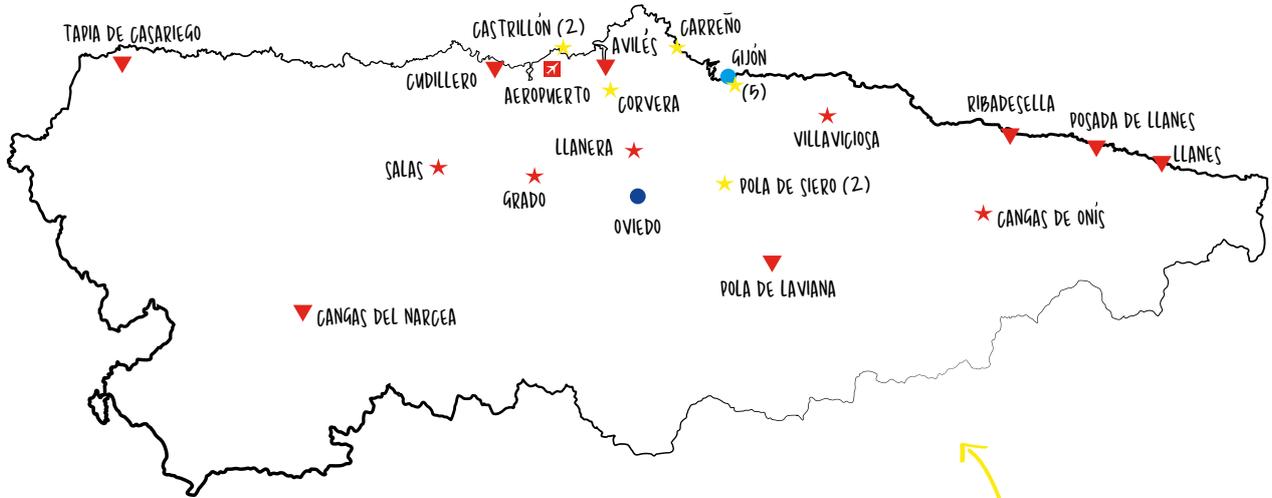


To this end, the development of alternative energies in the transport sector and the implementation of the corresponding supply infrastructure give rise to new opportunities for EDP Spain (electricity / natural gas).

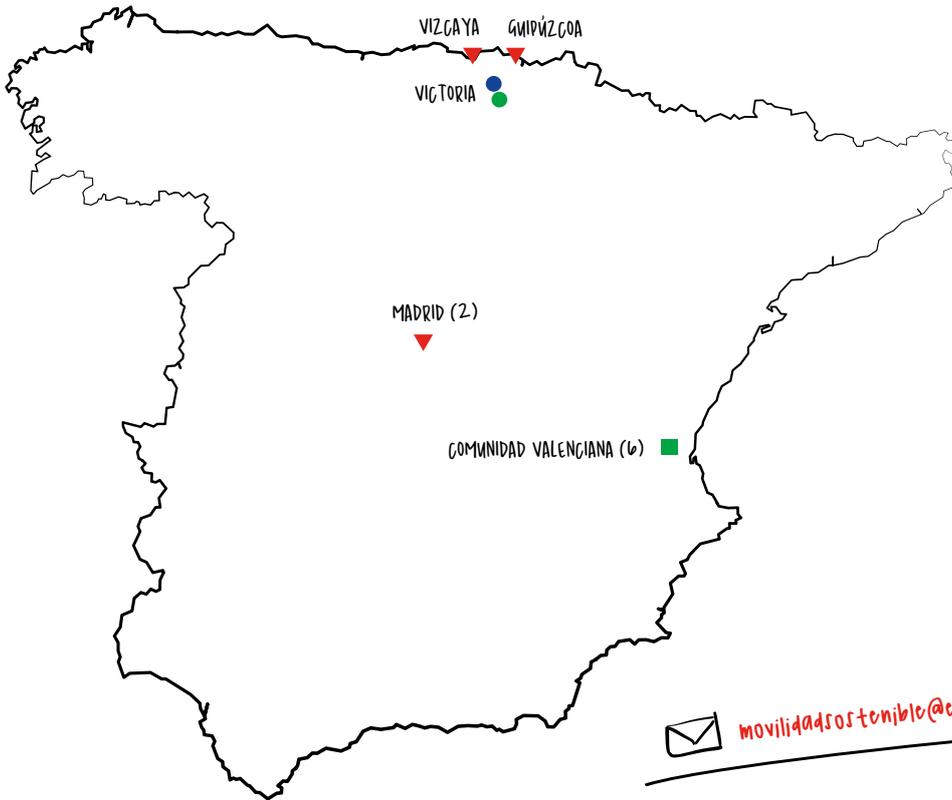


## EDP ESPAÑA'S STRATEGY

REGULATION	INFRASTRUCTURES	CUSTOMER	OWN FLEET AND EMPLOYEES
<p>Active participation in the forums defining the regulatory framework in progress.</p> <p>Associations, work groups, employers' organisations, administrations, EU.</p> <p><b>State initiatives:</b> MOVEA, MOVALT, MAN, R.D. on Charging Managers, Transport Innovation Plan; <b>EU's:</b> mobility package, directive on clean vehicles; <b>municipal plans.</b></p>	<p>Plan for the <b>construction of charging infrastructures</b> for electric vehicles (EV) y vehicle natural gas (VNG).</p> <p>Development and standardisation of own infrastructures.</p> <p>Agreements with city councils.</p> <p>Agreements with service stations.</p> <p>CIRVE, Samuel European projects.</p>	<p>Launching <b>offers for B2B and B2C customers.</b></p> <p><b>Development of new relationships with customers</b> (new retailer cycle, interoperability platforms, etc.).</p> <p>Development of agreements with <b>car manufacturers.</b></p> <p>Agreements with fleet management companies (Emulsa Gijón, Casintra).</p>	<p><b>Employee Plan 2.0:</b> promotion and benefits for EDP's employees.</p> <p><b>Own fleet:</b> reduction and full conversion before 2020.</p> <p><b>Car sharing:</b> Reduction in the use of personal vehicles.</p> <p><b>Fostering sustainable mobility among EDP's suppliers.</b></p>



**EDP'S DEVELOPMENT PLAN: PUBLIC CHARGING INFRASTRUCTURE**



 [movilidadsostenible@edpenergia.es](mailto:movilidadsostenible@edpenergia.es)

- ▼ AGREEMENT WITH SERVICE STATIONS, IN PROGRESS      ● OWN ECO-STATION IN SERVICE
- OWN ECO-STATION, UNDER CONSTRUCTION      ★ COLLABORATION AGREEMENT WITH CITY COUNCIL, IN OPERATION
- ★ COLLABORATION AGREEMENT WITH CITY COUNCIL, IN PROGRESS      ■ AGREEMENT WITH THE ASTURIAS AIRPORT, IN PROGRESS
- AGREEMENT WITH SHOPPING CENTRES



**VII**  
**CASE**  
STUDY  
CIRVE project

**BUILDING IBERIAN FAST CHARGING CORRIDORS WITHIN THE EUROPEAN ELECTROMOBILITY SYSTEM**

This project is led by the consortium comprised by the IBIL charging managers (project leader), EDP and other energy companies, together with the AEDIVE Association and other international partners, RENAULT and the Portuguese Centre for Excellence and Innovation (CEIIA). Furthermore, it is supported by the Spanish Ministry of Public Works and the Spanish Ministry of Economy, Industry and Competitiveness. The plan is jointly financed under the 2015 Connecting Europe Facility (CEF).

The first charging point in Eastern Asturias, located in the A8 motorway, in De La Vega Service Station (Posada de Llanes) is added to the EDP Spain fast charging point placed in Roces (Gijón).

### 3.5.6. ENERGY EFFICIENCY

The electrification of the demand with an increased presence of renewable energy, together with the energy efficiency measures, is the most efficient way to succeed at the transition of the current energy model into a more sustainable one.

In this context, one of the big strategic commitments of the EDP Group is framed: "Continuously offering customers products and services that contribute to greater efficiency in the final use of energy, achieving over 1 TWh of accumulated savings by 2020 (with regard to 2014)".



In this regard, the savings derived from the Spanish activity in the Energy Efficiency Services area are estimated in approximately 5.8 GWh/year, which involve avoiding the emission of about 2,639 tonnes of CO<sub>2</sub>.

Here, we should highlight projects in the B2B Segment, such as the implementation of an efficient lighting system based on LED technology or the installation of new medium-voltage supply systems. Likewise, the service portfolio continued progressing thanks to the expansion of the new maintenance product for low-voltage installations, Integra Baja Tensión, in the autonomous regions of Cantabria and the Basque Country.

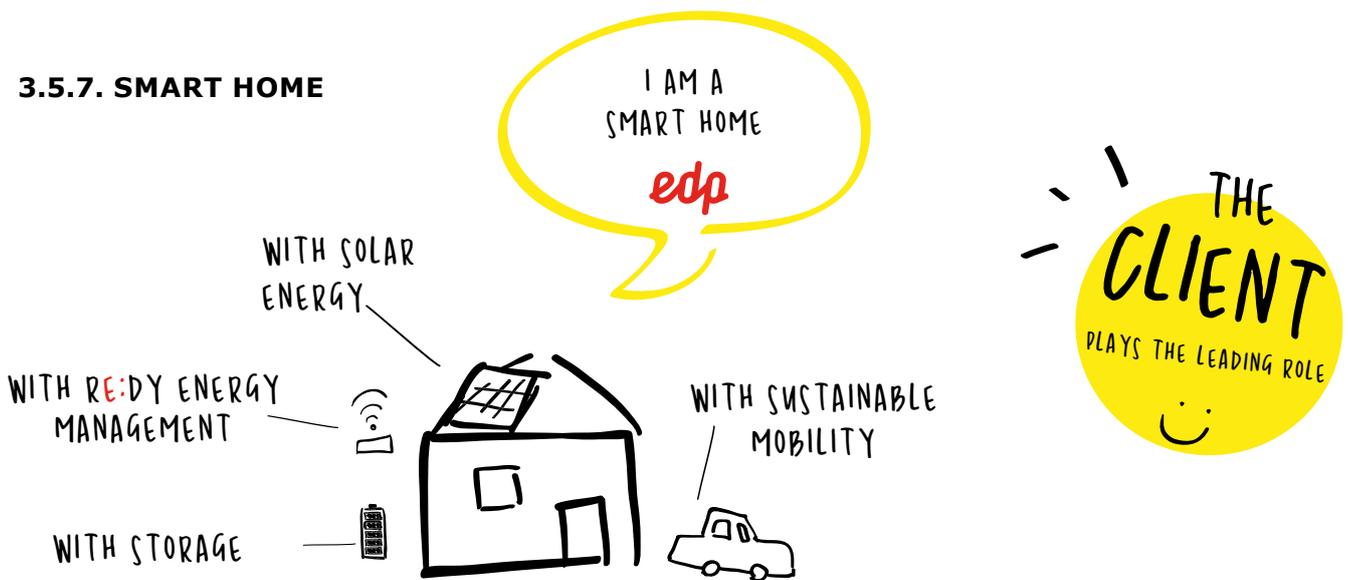
As part of the programme Save to Compete, unique projects in relevant companies have been pursued, involving transformations into natural gas and energy efficiency projects. The most important projects of the year were Sidenor Legutiano, Befesa, Euroserum, Capsa I, Capsa II, Tudela Robla and Tudela Aboño.



Additionally, the Building Service is a service focused on providing integral energy solutions for the buildings belonging to the tertiary sector, mainly condominiums.

Several facilities were managed here, mostly centralised boiler rooms, which provided heating and domestic hot water services to more than 16,900 dwellings with boiler rooms with microgeneration to natural gas, solar panels and LED lighting. Transformation projects of diesel/coal into natural gas were also executed.

### 3.5.7. SMART HOME



EDP, through Smart Home, continues developing tools that allow their customers to make the best decisions in order to transform their homes into more efficient, sustainable and, at the same time, more comfortable dwellings.

The improvements applied during this year have made RE:DY the EDP smart energy management system, become a complete management platform for the household. It offers information about both electricity and natural gas consumption. It identifies all savings possibilities. It remotely and efficiently manages any device, particularly those that are energetically more intensive, such as heating boilers and air conditioning units.

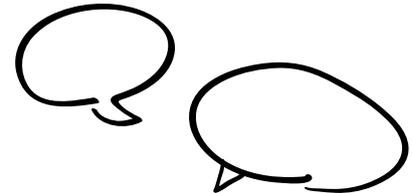


EDP deems that, in Spain, the distribution of the solar energy market should be open, promoting self-consumption, replacing the private consumption of the grid with the one generated by solar panels and selling the surplus to the grid at a market price, without subsidies. In order to do that, EDP Solar Energy is the solution that allows EDP customers to take advantage of solar power and become producers of some of the energy they consume. In 2017, the installation of the first solar generation systems with storage has been another milestone on the road to the generalisation of the producer-consumer figure.

Furthermore, the ongoing revolution towards a sustainable mobility, mainly electric, is fully entering the homes of EDP customers. Vehicles are usually charged at home or at the work centre. To this end, EDP developed throughout this year solutions that enable the installation of charging points both in single-family and multi-family dwellings. The integrated charging management with RE:DY tool allows optimising the contracted power and the capacity of the dwelling installation. Thus, it achieves savings of 80% in the energy cost per travelled km compared to traditional vehicles. Undoubtedly, this will benefit the unavoidable transition to a more sustainable mobility.

### 3.6. COMMUNITY DEVELOPMENT

MAINTAINING AN OPEN TRANSPARENT DIALOGUE WITH ALL STAKEHOLDERS IS A STRATEGIC PRIORITY FOR EDP IN ORDER TO BUILD AND STRENGTHEN RELATIONSHIPS OF TRUST, EXCHANGE KNOWLEDGE AND RELEVANT INFORMATION, ANTICIPATE CHALLENGES AND IDENTIFY NEW COOPERATION OPPORTUNITIES.



#### 3.6.1. LOCAL COMMUNITIES ACTION PLAN

EDP wants to know the issues that are considered more relevant for the stakeholders of the areas affected by generation facilities, their expectations and their opinion about the performance of the company. In this regard, interviews were conducted on 50 interest groups and 5 focus groups with people from Local Communities living in the surroundings of EDP Spain's generation facilities.



As a result of this work, 4 priority action areas were identified, based on the main concerns declared as relevant:



Lastly, a Local Community Action Plan was suggested and approved in 2017 and will be executed during 2018. It includes 11 initiatives to be developed in the municipalities where generation plants are located.

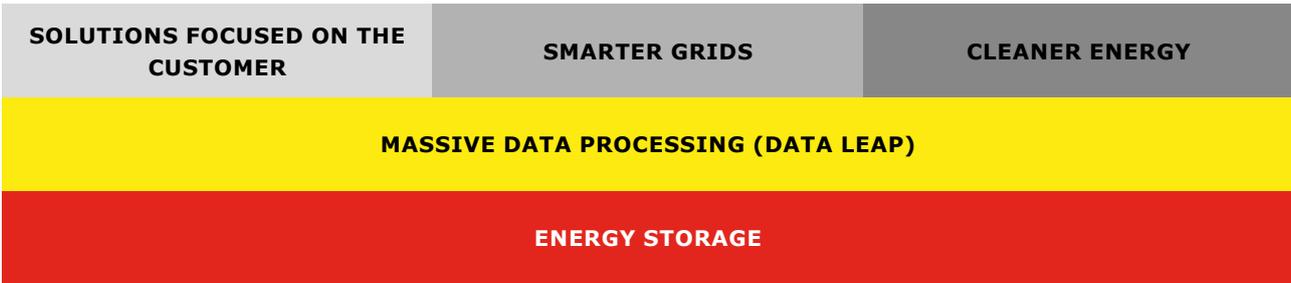
Students will do their internship in all the electricity production plants, where they will be able to improve their knowledge which will enable them to work. We will give priority to students from local communities.

One of the most advanced initiatives is the incorporation of EDP into the Dual Vocational Training programme.



**3.6.2. INNOVATION**

EDP’s R&D&I strategy is organised in five lines of work, aligned with generation, distribution and retailer businesses, as well as cross-sectional businesses.

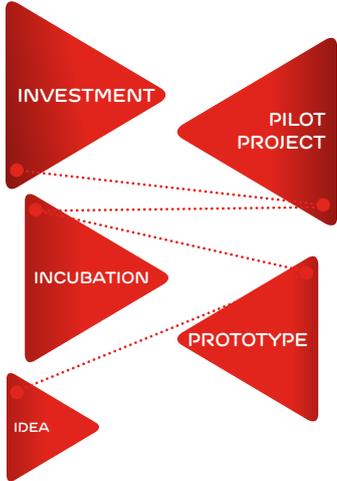


In order to develop these lines, EDP not only is carrying out projects within the company, but it has also started a relationship with the new global ecosystem of start-ups, whose capacity to generate projects with potential development in these lines is very broad.

**MAIN MILESTONES OF THE YEAR:**

IMPLEMENTATION OF EDP STARTER IN SPAIN

EDP Starter is the programme through which EDP helps start-ups to accomplish their innovative ideas in the energy sector and it is particularly focused on product development. Thus, we support entrepreneurs from the identification of a new idea to taking up a stake in the new company, including the middle stages: prototype creation, incubation and pilot project. In 2017, EDP implemented in Spain the main actions of the programme.



EDP STARTER ACCELERATION PROGRAM

One of the EDP Starter actions is the Acceleration Program by way of which EDP helps start-ups to accelerate the development process of their entrepreneurial proposals. During April and May 2017, the first EDP Starter Acceleration Program in Spain took place, in which ten start-ups in the energy sector participated. The activities were carried out at Google Campus Madrid and the winner was **Sentimer Chatbots**, which, as a prize, has been able to execute a pilot project with EDP to develop a chatbot allowing EDP customers to interact with a virtual agent in the recruitment process.

EDP OPEN  
INNOVATION  
2017

Another EDP Starter action is the **EDP Open Innovation** award, by means of which EDP rewards a start-up with €50,000 for submitting an innovative business proposal, even though it is in an early development stage. In October 2017, the winner of the EDP Open Innovation Prize was the Spanish company **Rated Power**, which had participated in the EDP Starter Acceleration Program and has developed an IT programme to carry out pre-engineering works in photovoltaic parks.

50,000  
EUROS

EDP SEED  
RACE 2017

Additionally, another company that had participated in the Acceleration Program, **Green Eagle**, won a convertible loan of €100,000 in the EDP Starter programme called **Seed Race**.

100,000  
EUROS

Through this programme, EDP rewards one start-up that belongs to the EDP Starter ecosystem (because it has participated in any of its programmes) and has shown the best evolution during the previous year.

**Green Eagle** developed micro-SCADA systems for wind farms that enable an easy expansion of new features in the systems with which each farm was originally equipped.

PARTICIPATION IN  
SOUTH SUMMIT  
2017

3,500  
SUBMITTED  
PROJECTS

Between 4 and 6 October, EDP participated with a booth and in a round table in the **South Summit 2017**, one of the biggest events for corporations and start-ups in Southern Europe. More than 200 international speakers, investment funds, venture capital and business angels, and 100 finalist start-ups selected among more than 3,500 projects submitted by more than 70 countries attended this event. In the EDP booth, the start-ups **Sentimer Chatbots**, **Rated Power** and **TRC**, who had participated in the EDP Starter Acceleration Program, were present.

PARTICIPATION  
IN THE OPEN  
INNOVATION 4.0  
PROGRAMME

**Open Innovation 4.0** is a public-private collaboration initiative of the European Business and Innovation Centre within the framework of the 4.0 Industry programme, promoted by the Asturias Institute of Economic Development (IDEPA), and 7 leading companies (Aciturri, Alsa, ArcelorMittal, EDP, Gonvarri-Hiasa-Gonvauto, Química del Nalón and Thyssenkrupp Elevator Innovation Centre) with interests in Asturias. The purpose of this initiative is that driving companies propose technological challenges in the 4.0 industry sector to new emerging companies in order to develop joint projects. As a result of its participation in this programme, EDP started to execute, together with the Asturian start-up **Energintel**, the **EnergyMate** project, aimed at developing a mobile application to inform EDP customers about their energy consumption by using natural language.



PARTICIPATION IN THE "SÍ, SOMOS INNOVACIÓN" PROGRAMME

The **Sí, somos innovación** (in English: **Yes, we are innovation**) project, promoted by the Fundación Universidad de Oviedo with the Oviedo City Council in October and November 2017, in which EDP took part, aims at fostering the creativity of university students by giving them the opportunity to face real challenges proposed by Asturian companies. Up to 11 student teams worked on challenges suggested by EDP, Alsa, Capsa, Liberbank and Seresco.

**EDP proposed 5 challenges:**

- 1 Promotion of electric vehicles
- 2 Disruptive communication
- 3 Digital transformation of employees
- 4 Information about electricity consumption
- 5 Digital customer

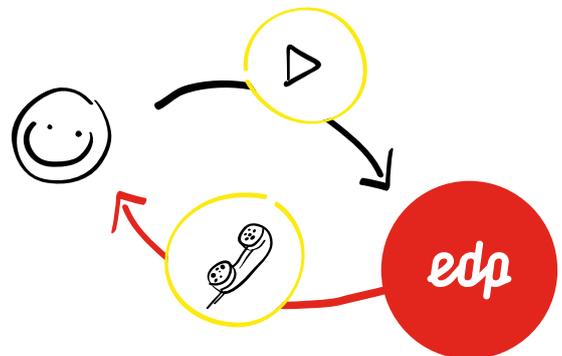
Numbers 1 and 3 made it to the final of the programme.

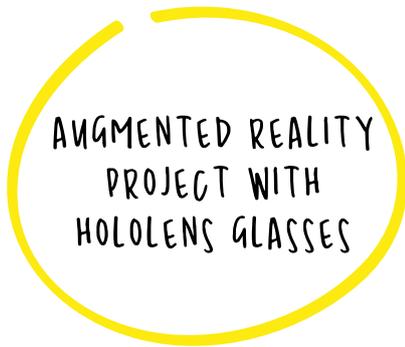
INTEROPERABILITY LABORATORY FOR SMART METERS

Regarding the field deployment of smart meters, equipment from different manufacturers are installed in the same grid and must communicate among each other. Therefore, guaranteeing their interoperability is critical. Furthermore, equipment with new features that must be tested in laboratories before field installation may come up in the market. For these reasons, in 2017 EDP incorporated, in the Corredoria substation, an **interoperability laboratory** equipped with a test bench and four switching cabinets to carry out these interoperability and feature validation tests.

AMAZON IOT BUTTON PROJECT  
funciona

The Business Intelligence and Development area started to develop a pilot project to **use Amazon AWS IoT Button** with the support of the Innovation area. These devices are programmable buttons based on the Amazon Dash Button hardware that, via Wi-Fi connection, allow an EDP customer that has contracted the Funciona service to request Customer Care to call him/her. This way, the communication between customers and EDP is faster and the provision of the service is accelerated. EDP has already started to launch these devices experimentally.





The Innovation, Information Technologies and Operation & Maintenance of Electricity Distribution areas conducted a proof of concept using the **Hololens augmented reality glasses by Microsoft**. The proof allowed EDP's Operation and Maintenance staff to test the connection of the operators working directly on site with the technicians located at the distribution central office. This way, the technicians at the central office can see on real time what the on-site operator is seeing. Therefore, an operator can carry out repair tasks on site while a specialist is guiding him remotely and accurately, and both can share technical information about the facilities in different formats. The main advantage verified was that the on-site operator accesses these communication and information features using his voice, so his/her hands are free to perform the operations.



**JOSE NEGUERUELA RAMÓN**  
**Information Technologies Director**

"In 2017, EDP continued progressing on the digitisation process and started analysing systems and applications that must be managed in the Cloud. Business areas are in line with this strategy. In technical areas, several processes were mobilised, enabling the use of mobile devices in field operations. The augmented reality project carried out together with the Innovation Management must be highlighted.

Concerning Retailer Systems, we continued to improve and strengthen digital channels, providing customers with more self-service possibilities, developing the retailer range with new products and advantages for resident customers and improving mobility solutions in order to provide the Funciona Service. In the area of distribution Retailer Systems, we have initiated a modernisation plan for Mis Consumos application aimed at improving the customer experience, and we carried out technical improvements to enhance the robustness of internal processes. During 2017, very relevant actions were also performed in order to adapt the business and distribution applications to regulatory and legal changes, such as the changes to the switching process among agents or the submission of tax information to the Immediate Submission of Information system (SII, in Spanish).

We keep improving our abilities regarding Information Security, both in the organisation and the technological field, facing an increasing number of threats, which are also more complex, and taking up new challenges, such as the adaptation to the new Data Protection Regulation.

The launched initiatives related to Digital Transformation, the new working methods, sharing information and the search of an increased process efficiency through the use of technology have started to bear their first fruits, activating the technological innovation gene in a cross-sectional manner at our company".

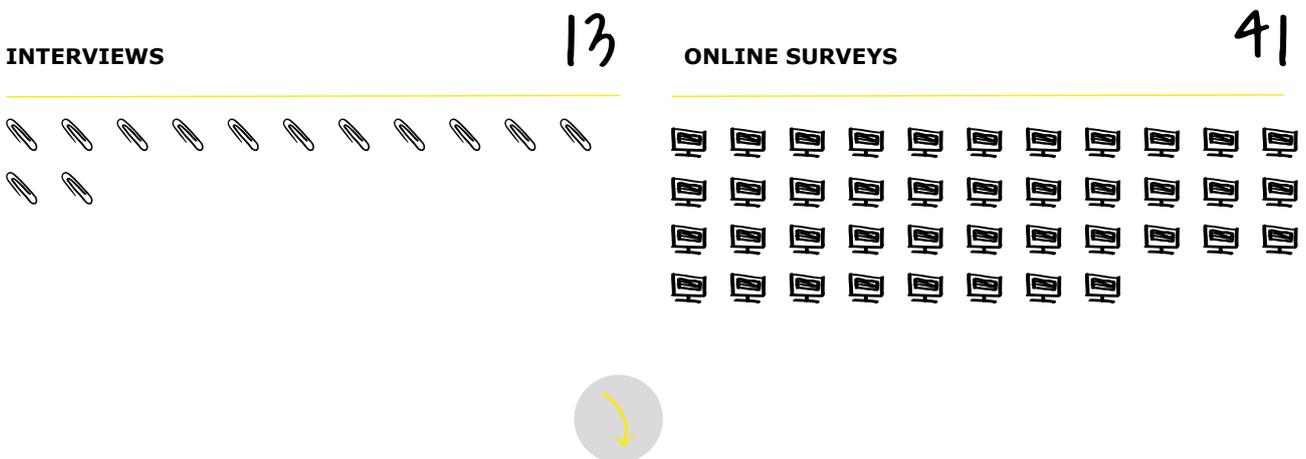


**3.6.3. SOCIAL NGO ACTION PLAN**

Within this group of stakeholders, we conducted interviews with several NGOs, in which their representatives could freely talk about their interests, concerns and expectations regarding EDP. After analysing their answers, we observed that the most relevant issues for most of them are the financing, extension and sustainability of the activity and the professionalisation of their internal management.

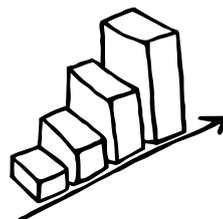


**SOCIAL NGOS**



**CRITICAL ISSUES**

<b>FINANCING</b>	<b>ACTIVITY EXTENSION</b>	<b>ACTIVITY SUPPORT</b>	<b>PROFESSIONALISE THE INTERNAL MANAGEMENT</b>
<ul style="list-style-type: none"> <li>• Obtaining financing, apart from donations.</li> <li>• Need of stable members.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase and improvement of current services and new projects.</li> <li>• Reaching a greater number of people.</li> </ul>	<ul style="list-style-type: none"> <li>• Consolidation of the activity.</li> <li>• Sustainability of all the activities performed, maintaining long-term projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Creating a stronger structure: hiring experts (doctors, administrative officers, etc.).</li> </ul>



Consequently, EDP defined an action plan to meet their expectations.

### 3.6.4. SOCIAL INVESTMENT POLICY

In 2017, the Social Investment Policy of the EDP Group was approved. This policy sets out the corporate objectives and strategies concerning social investment, which are developed through social responsibility programmes and activities, own and collaborative initiatives, donations and volunteering.

THROUGH ITS THREE FOUNDATIONS,  
LOCATED IN PORTUGAL, SPAIN AND  
BRAZIL, THE EDP GROUP ANNUALLY  
INVESTS AROUND



IN PROGRAMMES FOCUSED  
ON COMMUNITIES AND  
VOLUNTEERING ACTIVITIES



THANKS TO FUNDACIÓN EDP ESPAÑA, THE FOLLOWING PROGRAMMES

In Spain, the Social Investment Policy of the EDP Group will be implemented through the EDP España Foundation and the business units through the EDP España Environment, Sustainability, Innovation and Quality Management

**EDP SOLIDARIA PROGRAMME**

565.000€  
and 38,916 beneficiaries

**EDP ENERGÍA SOLIDARIA PROGRAMME**

174.000€  
and 19,988 beneficiaries

**FOUNDATION GRANTS**

257 grants

**VIVA NUESTRA ENERGÍA**

100.000€  
and 17,368 beneficiaries



#### VIVA NUESTRA ENERGÍA PROGRAMME

In the framework of EDP's policies and its commitment to SDGs, one of its undertakings is the creation of value for stakeholders through social investment programmes and activities that combine and meet social needs. EDP, as an initiative to make itself known as a responsible environmentally-committed company, has developed the *Viva nuestra energía* (in English: Long Live our Energy) programme, which connects two different worlds:

COMPANY AND EDUCATION



**VIVA NUESTRA ENERGÍA (VNE)**

Through this programme, EDP actively cooperates with schools to educate students by working on the cross-sectional sustainability topic and showing a friendly and close image that also conveys positive messages regarding the commitment to and respect for the environment.

Thus, the VNE programme started in Spain in 2010. It is developed in Asturias, Cantabria, the Basque Country, Madrid, Murcia, Castile and Leon and Merida, and has visited 1,565 schools and reached 256,000 students since then.

Each session is led by expert instructors that introduce different cartoon characters who travel to the "Renewable Energy World".

THEREFORE, **LOLO EOLO** INVITES US TO DISCOVER THE WIND POWER WORLD, **NANO SOLANO** THE SOLAR POWER WORLD, **VERA RIBERA** THE HYDRO POWER WORLD, **JUAN VOLCÁN** THE GEOTHERMAL WORLD, **TOMÁS BIOMÁS** THE BIOMASS WORLD AND **CARLOS CALDERA** THE THERMAL POWER WORLD.



Juan Volcán      Lolo Eolo      Vera Ribera      Tomás Biomás      Carlos Caldera      Nano Solano



On 27 December, a party was celebrated at the EDP social headquarters. It was attended by 78 children who enjoyed the evening getting to know the place where their parents and other relatives work and also learning new things thanks to the *Viva nuestra energía* programme led by our instructors.



Plus, the Aliatar prince, together with his page, visited the party too. He talked to everyone and collected the letters of the children, who also enjoyed the wonderful performance by some jugglers.





**LIVING INNOVATION**

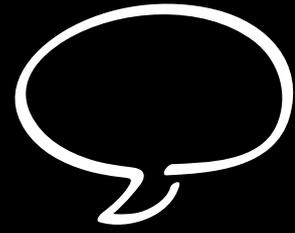


**THE**  
**LIVING ENERGY**  
**BOOK**



by *edp*





# 04

## YEAR-ON-YEAR DATA

<b>4.1. FINANCIAL INDICATORS</b>	<b>109</b>
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**THE**  
**LIVING ENERGY**  
**BOOK**

by *edp*





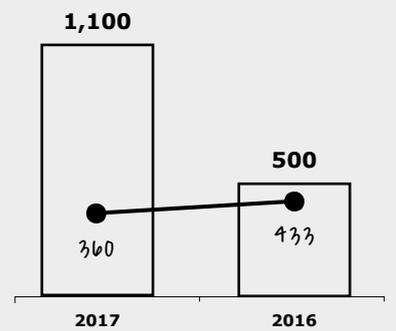
# 04 YEAR-ON-YEAR DATA

## 4.1. FINANCIAL INDICATORS

FINANCIAL INDICATORS	UN	2017	2016	2015
<b>TURNOVER</b>	M€	3,315	3,350	3,875
<b>EBITDA</b>	M€	1,100	500	518
<b>NET PROFIT (EAT)</b>	M€	853	438	598
<b>OPERATIONAL INVESTMENTS</b>	M€	106	150	121
<b>NET DEBT (1)</b>	M€	-983	1,213	865

(1) In 2017, it includes the positive effects of the sale of the gas distribution activity.

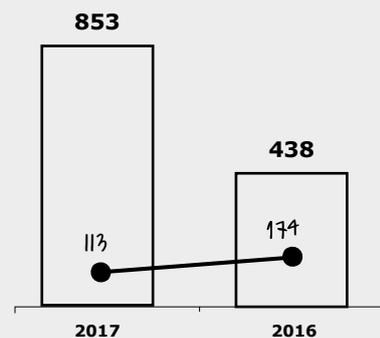
**EBITDA  
€ MILLION**



EBITDA M€  
 EBITDA without EDP Naturgas Energía

ECONOMIC INDICATORS	UN	2017	2016	2015
<b>ENVIRONMENTAL EXPENDITURE AND INVESTMENTS</b>	M€	60.3	79.2	56.4
<b>MANAGING WASTE, WASTEWATER AND LAND PROTECTION</b>	M€	17.1	17.2	19.4
<b>PROJECTS RELATED TO ENERGY EFFICIENCY</b>	M€	8.7	13.0	1.9
<b>ENVIRONMENTAL MANAGEMENT AND PREVENTION</b>	M€	32.0	45.7	32.0
<b>RESEARCH PROJECTS RELATED TO THE ENVIRONMENT</b>	M€	0.4	0.5	1.0
<b>OTHERS</b>	M€	2.1	2.7	2.2

**NET PROFIT (EAT) € MILLION**



Net profit (EAT) (M€)  
 Net profit (EAT) without EDP Naturgas Energía

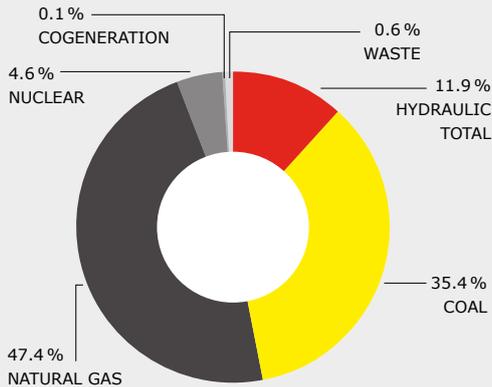


In July 2017, the gas distribution was sold to a consortium of investors comprised by JP Morgan Infrastructure, Swiss Life and Abu Dhabi Investment Council. This fact affects the configuration of EDP España, so some indicators may feature significant variations.

## 4.2. TECHNICAL INDICATORS

### ELECTRICITY GENERATION

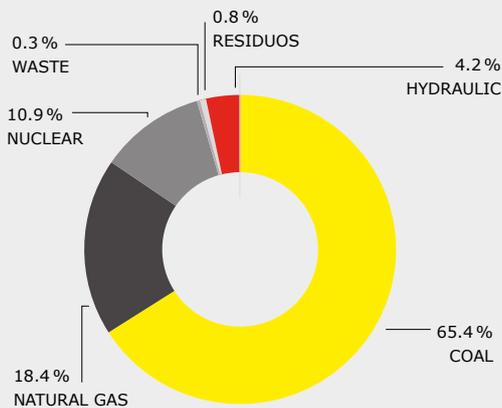
#### INSTALLED GENERATING CAPACITY BY TECHNOLOGY



INSTALLED PRODUCTION CAPACITY	UN	2017	2016	2015
<b>HYDRAULIC TOTAL</b>	Gross MW	<b>432</b>	<b>432</b>	<b>433</b>
COAL	Gross MW	1,283	1,283	1,535
NATURAL GAS	Gross MW	1,721	1,721	1,721
NUCLEAR	Gross MW	165	165	165
<b>THERMAL TOTAL</b>	Gross MW	<b>3,169</b>	<b>3,169</b>	<b>3,422</b>
<b>OVERALL TOTAL</b>	Gross MW	<b>3,601</b>	<b>3,601</b>	<b>3,854</b>
WIND POWER <sup>(1)</sup>	Gross MW	0	0	1,494
IN SPAIN (15,5%)	Gross MW	0	0	340
COGENERATION	Gross MW	5	5	5
WASTE	Gross MW	20	20	20
<b>SPECIAL TOTAL</b>	Gross MW	<b>26</b>	<b>26</b>	<b>1,520</b>
TOTAL	Gross MW	3,627	3,627	5,374

<sup>(1)</sup> Investments in wind power are made through EDP Renewables

#### NET ELECTRICITY GENERATION BY TECHNOLOGY



NET ELECTRICITY GENERATION	UN	2017	2016	2015
<b>HYDRAULIC TOTAL</b>	Gross MW	<b>471,842</b>	<b>930,227</b>	<b>792,503</b>
COAL	Gross MW	7,420,988	5,149,897	8,945,939
NATURAL GAS	Gross MW	2,087,331	1,639,483	1,081,823
NUCLEAR	Gross MW	1,235,541	1,238,837	1,226,642
<b>THERMAL TOTAL</b>	Gross MW	<b>10,743,860</b>	<b>8,028,217</b>	<b>11,254,404</b>
<b>OVERALL TOTAL</b>	Gross MW	<b>11,215,702</b>	<b>8,958,444</b>	<b>12,046,907</b>
WIND POWER <sup>(1)</sup>	Gross MW	0	0	3,315,140
IN SPAIN (15,5%)	Gross MW	0	0	751,285
COGENERATION	Gross MW	31,861	28,751	28,746
WASTE	Gross MW	96,083	70,856	101,860
<b>SPECIAL TOTAL</b>	Gross MW	<b>127,944</b>	<b>99,607</b>	<b>3,445,746</b>
TOTAL	Gross MW	11,343,646	9,058,051	15,492,652

<sup>(1)</sup> Investments in wind power are made through EDP Renewables

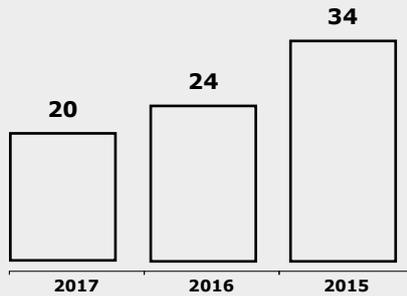


**ELECTRICITY DISTRIBUTION**

<b>ELECTRICITY DISTRIBUTION INSTALLATIONS</b>	<b>UN</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
HV overhead lines (50/132 kV)	Km	1,272	1,273	1,274
MV overhead lines (5/10/16/20/22/24 kV)	Km	4,805	4,786	4,765
HV underground lines (50/132 kV)	Km	43	43	39
MT underground lines MT (5/10/16/20/22/24 kV)	Km	1,658	1,639	1,617
LV overhead grids <sup>(1)</sup>	Km	9,618	9,618	9,609
LV underground grids <sup>(1)</sup>	Km	3,217	3,167	3,112
Transformation centres	Nº	6,731	6,726	6,719
Transformation centre installed capacity	MVA	2,297	2,289	2,281
Substations <sup>(1)</sup>	Nº	146	58	59
Transformers in substations	Nº	120	121	123
Installed capacity in substations	MVA	5,293	5,264	5,255

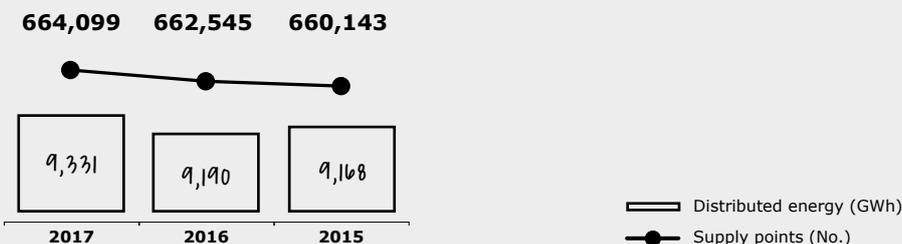
<sup>(1)</sup> It includes MV Substations and Manoeuvre-Interconnection

**TIEPI EVOLUTION IN EDP ESPAÑA (min)**



<b>ELECTRICITY DISTRIBUTION INSTALLATIONS</b>	<b>UN</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>SUPPLY POINTS</b>	Nº	<b>664,099</b>	<b>662,545</b>	<b>660,143</b>
Low Voltage (<1kV)	Nº	662,960	661,407	659,004
Medium Voltage (>1kV y <36kV)	Nº	1,114	1,114	1,116
High Voltage (<36kV)	Nº	25	24	23
<b>DISTRIBUTED ENERGY</b>	GWh	<b>9,331</b>	<b>9,190</b>	<b>9,168</b>
Low Voltage (<1kV)	GWh	2,222	2,244	2,223
Medium Voltage (>1kV y <36kV)	GWh	1,309	1,302	1,307
High Voltage (<36kV)	GWh	5,801	5,643	5,637

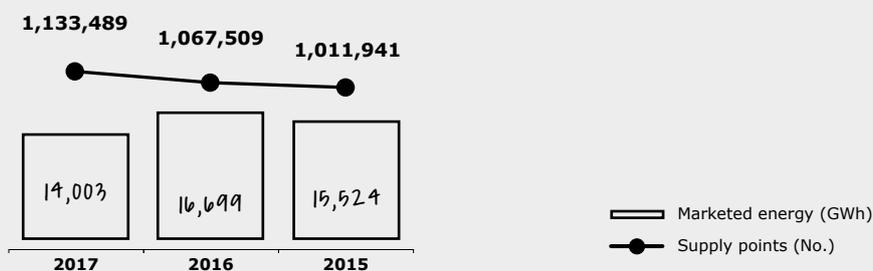
**ELECTRICITY DISTRIBUTION**



## ELECTRICITY AND GAS RETAILER

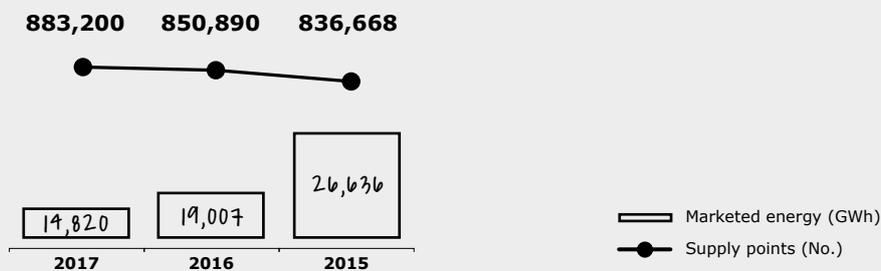
ELECTRICITY RETAILER	UN	2017	2016	2015
<b>SUPPLY POINTS</b>	No.	<b>1,133,489</b>	<b>1,067,509</b>	<b>1,011,941</b>
Last resort	No.	219,160	227,159	237,559
Free market	No.	914,329	840,350	774,382
<b>MARKETED ENERGY</b>	GWh	<b>14,003</b>	<b>16,699</b>	<b>15,524</b>
Last resort	GWh	446	477	497
Free market	GWh	13,556	16,222	15,027

### ELECTRICITY RETAILER



GAS RETAILER	UN	2017	2016	2015
<b>SUPPLY POINTS</b>	No.	<b>883,200</b>	<b>850,890</b>	<b>836,668</b>
Last resort	No.	51,740	54,485	58,772
Free market	No.	831,460	796,405	777,896
<b>MARKETED ENERGY</b>	GWh	<b>14,820</b>	<b>19,007</b>	<b>26,636</b>
Last resort	GWh	236	244	279
Free market	GWh	14,584	18,763	26,357

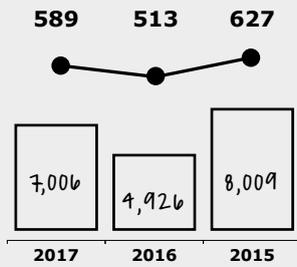
### GAS RETAILER



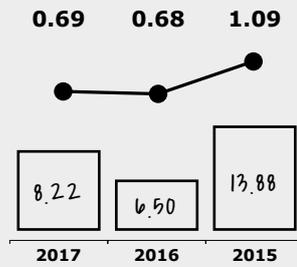


### 4.3. ENVIRONMENTAL INDICATORS

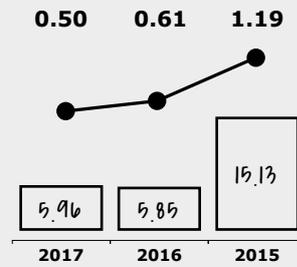
#### CO<sub>2</sub> EMISSIONS



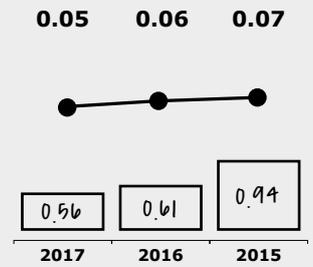
#### SO<sub>2</sub> EMISSIONS



#### NO<sub>x</sub> EMISSIONS



#### PARTICLE EMISSIONS



▬ Total emissions (thousand tons)

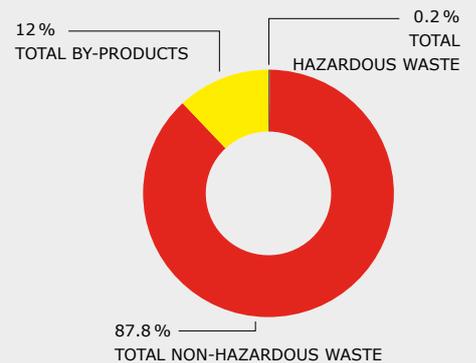
● Specific emissions (g/kWh)

Note: corresponding to the generation activity

WASTE AND BY-PRODUCTS	UN	2017	2016	2015
Total hazardous waste	tons	561	887	2,224
Total non-hazardous waste	tons	267,705	188,634	351,284
Total by-products	tons	36,585	33,746	22,940
Total generated	tons	304,850	223,267	376,448
Total recovered	tons	226,542	173,946	266,727

Note: In 2017, 34.6% of hazardous waste and 99.9% of non-hazardous waste correspond to the generation activity and the rest correspond to the distribution activity

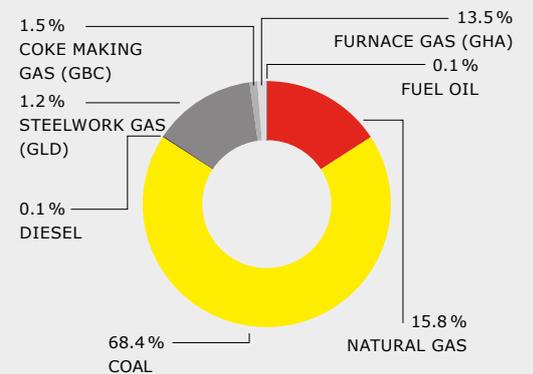
#### WASTE AND BY-PRODUCTS



FUEL CONSUMPTION	UN	2017	2016	2015
Fuel oil	TJ	57	116	131
Natural gas	TJ	15,063	12,756	9,904
Coal	TJ	65,276	45,156	85,305
Diesel	TJ	78	78	82
Furnace gas (GHA)	TJ	12,897	8,925	11,631
Coke making gas (GBC)	TJ	968	1,125	1,054
Steelwork gas (GLD)	TJ	1,151	944	1,484
<b>TOTAL</b>		<b>95,490</b>	<b>69,100</b>	<b>109,591</b>

Note: corresponding to the generation activity

#### FUEL CONSUMPTION

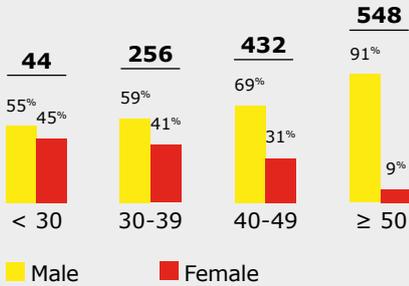


WATER	UN	2017	2016	2015
Cooling water	m <sup>3</sup> x10 <sup>3</sup>	509,326	370,625	494,323
Electricity generation water	m <sup>3</sup> x10 <sup>3</sup>	1,568	2,078	2,345
Recovered water out of abstracted water (%)	m <sup>3</sup> x10 <sup>3</sup>	99%	98%	94%

Note: corresponding to the generation activity

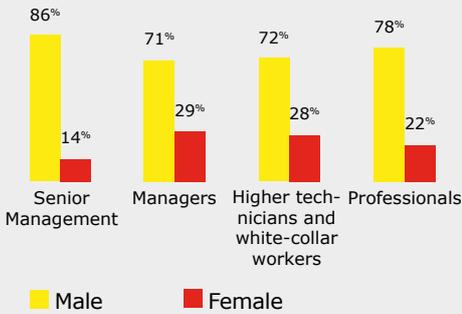
## 4.4. SOCIAL INDICATORS

### EMPLOYEE PROFILE BY AGE



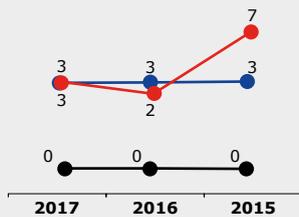
EMPLOYEES	UN	2017	2016	2015
Employees	No.	1,280	1,519	1,510
Percentage of women	%	24	24	25
Average age of the employees	Years	47	48	47
Absentee rate	%	4.03	3.87	3.57
Employee remuneration costs	Thousands of €	95,463	103,143	103,569
Contributions to Pension Plans	Thousands of €	2,864	3,023	2,978

### EMPLOYEE PROFILE BY PROFESSIONAL CATEGORY

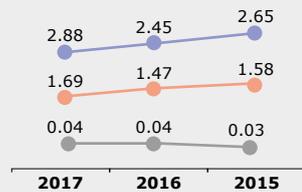


TRAINING	UN	2017	2016	2015
Total training hours	Hours	42,609	49,696	50,243
Participation rate	Participants	7,013	10,250	11,273
Training actions	No.	1,137	1,370	1,147

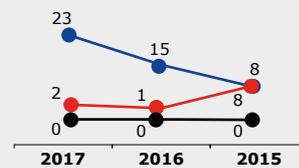
### ACCIDENTS OWN WORKFORCE



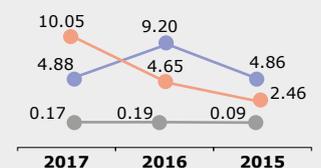
### ACCIDENT RATE OWN WORKFORCE



### ACCIDENTS CONTRACTORS



### ACCIDENT RATE CONTRACTORS



● Hazard index  
No. of accidents resulting in time off work/people exposed \*10<sup>3</sup>

● No. of accidents resulting in sick leave

● Frequency index  
No. of accidents resulting in time off/hours worked \*10<sup>6</sup>

● No. of accidents not resulting in sick leave

● Severity index  
No. days lost/hours worked \*10<sup>3</sup>

● No. of fatal accidents





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