

# ACCIONA Energy's Commitment

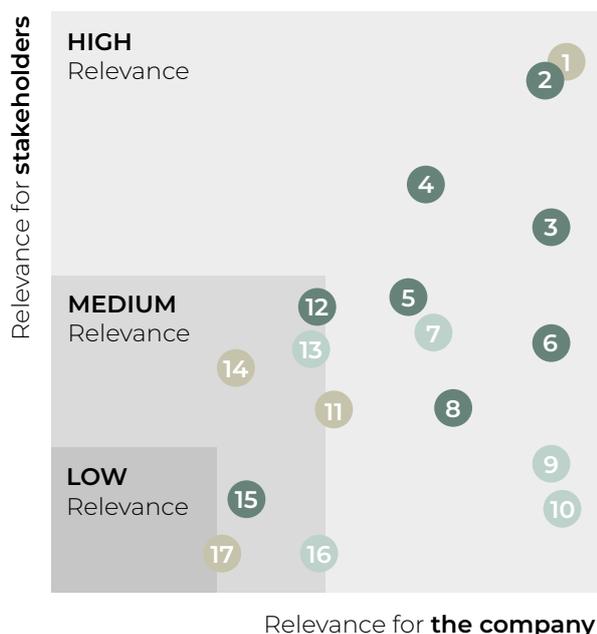
The following grid shows the results of the materiality analysis, which is used to generate the content index of the chapter.

## ACCIONA ENERGY MATERIALITY ANALYSIS

- Economic Dimension
- Environmental Dimension
- Social Dimension



Further information on how this grid is generated can be found in the 'Materiality analysis' chapter.



1. Climate change
2. Investment in renewable energies
3. Energy transition and regulatory frameworks
4. Innovation and new business opportunities
5. Economic performance
6. Safety and quality of electricity supply
7. Local communities
8. Ethics and anti-corruption\*
9. Human rights\*
10. Health, safety and well-being
11. Environmental management and biodiversity
12. Non-financial risks
13. Human capital
14. Water use
15. Supply chain
16. Equality and diversity among employees
17. Waste and circular economy

\* The performance in Ethics and anti-corruption and Human rights are described in the 'Corporate Governance' chapter.



**HIGHLIGHTS  
IN  
2018**

**ECONOMIC**

- › The index of **satisfied customers** is 100 %.
- › **94 % of the suppliers are local.**
- › A total **innovation** figure of **EUR 61.8 million.**

**SOCIAL**

- › Implementation of the **Social Impact Management methodology in 17 projects** and 11 countries.
- › The **accident frequency** rate of employees and contractors has **reduced by over 40 %.**
- › **More than 264,700 beneficiaries** of the social initiatives carried out in projects.

**ENVIRONMENTAL**

- › **100 % renewable energy** production through five renewable technologies.
- › **Avoided the emission** to the atmosphere of a **total of 14.7 million tonnes of CO<sub>2</sub>.**
- › **8 projects** registered for **Clean Development Mechanisms (CDM).**



**ACCIONA ENERGY  
IN 2018**

ACCIONA Energy is the largest global operator dedicated to the production of electricity exclusively from renewable sources.

**1,587**

EMPLOYEES

**9,627 MW**

RENEWABLE INSTALLED  
POWER

**22,087 GWh**

PRODUCED

WITH ASSETS IN **16**  
COUNTRIES ON FIVE  
CONTENTS

**€ 2,206 million**

SALES

**€ 743 million**

EBITDA

ACCIONA ENERGY'S PRESENCE IN 2018



WIND



PHOTOVOLTAIC



HYDROELECTRIC



SOLAR THERMAL



BIOMASS

AMERICA

- Canada
- United States
- Mexico
- Chile
- Costa Rica

EUROPE

- Croatia
- Spain
- Hungary
- Italy
- Poland
- Portugal
- Ukraine

AFRICA

- Egypt
- South Africa

ASIA AND OCEANIA

- Australia
- India

## Investing exclusively in renewable energies

### Climate change

The most remarkable characteristic of ACCIONA Energy is its firm, confident choice to produce exclusively renewable energy. This is the basis of the business model, a fact that produces a positive impact and provides an intrinsic value in the fight to curb climate change.

Investment in renewable energy, thanks to its technical and economic competitiveness, contributes to reducing CO<sub>2</sub> emissions that cause climate change, and is presented as the best sustainable energy solution in the long term.

Given the nature of its activity, ACCIONA Energy is not a relevant emitter. However, it works towards achieving the carbon neutrality objective for the whole group, offsetting 100 % of the emissions it generates (37,782 t CO<sub>2</sub>e in 2018).

### THE WORLD'S GREENEST ELECTRICITY COMPANY FOR THE FOURTH YEAR RUNNING

ACCIONA has once again this year renewed its position as the 'greenest' electricity generation company in the world, a title it has held since 2015 in the New Energy Top 100 Green Utilities ranking. This ranking is produced on a yearly basis by Energy Intelligence, an independent consultant specialised in energy markets.

The ranking selects 100 of the biggest electric power production companies in the world and classifies them according to their CO<sub>2</sub> emissions and their installed capacity in renewable technologies (not including hydroelectric) in order to determine their degree of involvement in the transition to a low-carbon electrical system.

The consultant draws three conclusions: the prominence of the European market in the ranking (with five companies on the continent in the top 10), the GHG emissions ratio below 500 kgCO<sub>2</sub>/MWh for all companies evaluated and the growing development of renewable power installed, which has almost tripled in the past seven years.

### EMISSIONS AVOIDED BY COUNTRY BY RENEWABLE ELECTRICITY GENERATION IN 2018

Countries	Installed capacity (MW)	Production (GWh)	Emissions avoided (tCO <sub>2</sub> e)
Australia	435	1,072	955,254
Canada	181	481	363,077
Chile	291	532	417,329
Costa Rica	50	285	193,928
Croatia	30	78	53,211
United States	785	2,334	1,542,299
Egypt	165	-	-

Continues >

Countries	Installed capacity (MW)	Production (GWh)	Emissions avoided (tCO <sub>2</sub> e)
Spain	5,681	13,242	8,439,812
Hungary	24	42	28,988
India	164	392	351,930
Italy	156	223	116,494
Mexico	1,144	2,282	1,304,076
Poland	101	227	190,247
Portugal	165	347	216,626
South Africa	232	550	575,069
Ukraine	24	-	-
<b>Total</b>	<b>9,627</b>	<b>22,087</b>	<b>14,748,341</b>

ACCIONA Energy produces and sells renewable energy only, helping to displace fossil fuels in national electricity mixes. The division committed to investing USD 2,500 million in the 2016–2020 period in renewable generation to reach a total capacity of 10,500 MW in order to avoid the emission of more than 20 million tonnes of CO<sub>2</sub> per year. In 2018, ACCIONA reached 9,627 MW of installed capacity and avoided the emission to the atmosphere of a total of 14.7 million tonnes of CO<sub>2</sub>. Between 2016 and 2018, ACCIONA Energy accumulated an investment over EUR 1.4 billion, in line with its commitment for the 2016–2020 five-year period.

With over 20 years of experience in the sector, the company has a stake in the main renewable technologies, covering activities that include the entire value chain: development, engineering and construction, operation and maintenance, and marketing of energy.

### CONTINUOUS IMPROVEMENT IN MAINTENANCE OF EQUIPMENT WITH SF<sub>6</sub>

Sulphur hexafluoride or SF<sub>6</sub>, is a high-density inert gas whose high global warming potential makes it stand out as a source of anthropogenic greenhouse gas emissions.

This gas is used as an insulator in electricity transformation and distribution equipment. Much of the necessary equipment for discharge to the renewable energy grid contains this type of gas.

The *Intergovernmental Panel on Climate Change (IPCC) Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories* estimates that, each year, the leaks due to maintenance of equipment with SF<sub>6</sub> reach 2 % of the total volume of gas that they contain. Yet, this figure has been significantly reduced at ACCIONA, thanks to the continuous improvement efforts carried out in maintaining this equipment. As such, during 2018, leaks of this type of gas in the company constituted a reduction in emissions compared to the theoretical value equivalent to almost 11,500 t CO<sub>2</sub>.

## Regulatory frameworks: trading of CO<sub>2</sub> emission rights

In 2018, ACCIONA Energy sold its solar thermal facilities subject to the EU emission trading scheme, the only ACCIONA centres that were subject to such regulations.

ACCIONA actively participates in the development of projects associated with the fight against climate change, and supports the transfer of clean technologies through the use of flexible mechanisms, such as the Clean Development Mechanism (CDM). In 2018, the group had 8 CDM projects registered in Mexico, India, Chile and Costa Rica, for a total of almost 750 MW of renewable installed capacity. The company also plays a role in the voluntary carbon market through the Verified Carbon Standard (VCS) programme, with 2 wind power projects in the US with a joint capacity of 255 MW.

## Safety and quality of supply as a matter of confidence with customers

ACCIONA Energy's Renewable Energy Control Centre (CECOER) guarantees the maximum availability and quality of energy, in a predictable form and in compliance with the current legislation in each of the countries in which it operates. It does so through its control, supervision and permanent operation, 24 hours a day, 365 days a year.

### ACCIONA ENERGY CERTIFICATES

- 100 % certifiable installed MW<sup>1</sup> are ISO 9001 and ISO 14001-certified.
- 100 % of the renewable energy commercialisation and sale activity with guarantee of origin accredited by the CNMC.

<sup>1</sup> Certifiable capacity is understood to be any installation in the operations phase one year after its start-up and owned by ACCIONA Energy.

## Long-term agreements

Three factors make the corporate procurement of green energy a powerful lever in the transition towards a decarbonised economy: the competitiveness of renewable technologies, companies' interest in guaranteeing energy supply at a stable price over time and corporate climate change policies.

In this sense, in 2018, the company has continued to reinforce its strategy of selling renewable energy to large corporate customers that want to reduce their carbon footprint, obtaining new agreements for long-term renewable energy supply.

### Power Purchase Agreements (PPA)

In 2018, through the PPA (power purchase agreement) modality, ACCIONA Energy reached agreements with Apple, Empresa Nacional de Minería (ENAMI), Aguas Chañar and LATAM Airlines, among others, to which it will sell long-term renewable energy, in a business segment in which it expects to register significant growth in the coming years.

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**PPAs OFFER CUSTOMERS BETTER RISK COVERAGE IN A VOLATILE ELECTRICITY MARKET, COMPETITIVE PRICES AND A RELIABLE ELECTRICITY SUPPLY**

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ACCIONA Energy also develops turnkey projects for customers through Engineering, Procurement and Construction (EPC) contracts, as well as the management of renewable plant operation and maintenance.

## Customer relations and services at their disposal

ACCIONA Green Energy Developments, a subsidiary of ACCIONA Energy, manages the sale of 100 % renewable energy produced by the group's facilities. It also manages the sale of other independent renewable energy producers that benefit from the group's technical capacity and experience, adapted to the customer's needs.

ACCIONA Green Energy has extensive experience in the sale of energy in wholesale markets, with an annual volume of some 16,000 GWh.

In addition to the commercialisation service, customers receive support and assistance in a bid to offer them the most appropriate contracting method and optimise their bill. On top of the ability to download bills and the 24/7 telephone service, the main associated services include the option to view the consumption history and the price forecast, and the information related to avoided CO<sub>2</sub> emissions. The company has a Customer Relationship

Management (CRM) system that manages the customer relationship, thereby contributing to providing a service and ensuring optimum follow-up adapted to the characteristics of each customer.

### Customer satisfaction and loyalty

The division once again this year achieved a 100 % index of satisfied customers<sup>2</sup>.

## EVOLUTION OF CUSTOMER SATISFACTION

	2015	2016	2017	2018
Satisfied customers	100 %	94 %	100 %	100 %

In 2018, changes were introduced to the ways in which satisfaction is measured, with a view to better meeting its customers' needs. Specifically, ACCIONA Green Energy widened the information it gathers through its satisfaction surveys to include the type of services requested, the level of recommendation of ACCIONA among peers (which stands at 81 %) and the quality of information provided on electricity bills (which scored 4.77 out of 5), among others.

ACCIONA Solar, a subsidiary of the Energy division for the comprehensive maintenance of activities related to third-party photovoltaic production, has worked on defining a procedure to standardise, improve and expand the information in the communications received from customers and related to technical issues.

With regard to claims management, ACCIONA Green Energy customers are provided with both a 24-hour telephone line and access to a customer-specific website so that they can make a claim whenever they wish. In the wind farms in Chile, a form is available that can be completed at the plants. The division received 61 B2B claims, 89 % of which were resolved. ACCIONA Solar resolved 100 % of its claims (21 of a total 3,500 solar farm owners) within an average of 24 hours.

### RENEWABLE ELECTRICITY TRACKING FOR CUSTOMERS USING BLOCKCHAIN TECHNOLOGY

ACCIONA Energy has created a project to implement renewable electricity generation tracking with blockchain technology, so that customers who wish to can check in real time that 100 % of the electricity supplied is clean. This system boosts their trust and promotes the increase of this type of contract.

To date, it has been introduced in five wind power and hydraulic facilities in Spain, tracking the electricity until it is supplied to four corporate customers in Portugal, thereby becoming the first company to do this in these countries.

<sup>2</sup> This includes ACCIONA Green Energy, ACCIONA Solar and ACCIONA Energy Mexico.

## Continuous improvement

In 2018, 60 improvement groups have been running at ACCIONA Energy, with the direct involvement of over 950 employees. The Best Value improvement groups, for example, are working platforms comprising different departments for the purpose of implementing activities to reduce the levelised cost of electricity (LCOE) of the wind power and photovoltaic projects. The LCOE reductions achieved in 2018 were very significant both in wind power and in photovoltaic technology.

Furthermore, the implementation of lessons learned and good practices in the area of project execution has been systematised. The methodology has been set out in the *Lessons Learned Management Plan*, which states how to carry out the process of identifying, analysing and recording them, as well as the roles that are important in the process. In 2018, 666 lessons learned were recorded.

## Excellence in projects and assets in use

ACCIONA Energy has made progress in its system for assessing the excellence of projects and assets in use through the following actions:

- Consolidation of the Business Excellence area and the incorporation of experts in critical areas.
- Development and standardisation of the 'Quality Level' ranking model covering the entire value chain.
- Incorporation of new disciplines in the list of critical products and services.
- Implementation of the new 'Project Quality Coordinator' figure to ensure the quality at each stage of a project.
- Leadership in implementing the '8D critical quality problems' methodology and extension of the methodology to the Production and Engineering and Construction areas.
- Design of the 'ThinkQuality' programme to be rolled out in 2019.

## Workers' health

ACCIONA Energy's workplace health and safety risks arise from two of its core activities: construction and the operation and maintenance of renewable energy facilities.

As such, an Integrated Management System is maintained for the entire division, which sets out the minimum health and safety requirements to be met by all its companies and countries. This system is certified under standard OHSAS 18001 and covers 99 % of the activity. Work is planned to begin in 2019 to attain the new standard ISO 45001 certification.

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99 % OF THE ENERGY  
ACTIVITY IS CERTIFIED UNDER  
OHSAS 18001

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In Spain, the Health and Safety Commission offers support to employees, with the equal participation of company management and employee representatives. In addition, there are different forums for consultation and participation that fulfil the legal requirements of each country or region.

In 2018, the division focused on improving reporting of near-misses establishing quantitative targets for their monitoring within the control panel for Management. Equally, a mobile application was launched to allow the heads of each centre to more easily report near-misses that are presented at their facility.

## OCCUPATIONAL RISK IDENTIFICATION AND MANAGEMENT

The identification of potential occupational risks, their assessment and the control measures to minimise the likelihood of their occurrence are all recorded in specific procedures for each ACCIONA Energy facility according to its Management System. The risk analysis identifies the critical points and associated measures for each centre, which covers not only company employees but also contractors and partners of the division.

Furthermore, the facilities have their own emergency plans with guidelines on how to act in emergency situations. Company or outsourced employees can report an unsafe situation that they discover using the email [safety.energy@acciona.com](mailto:safety.energy@acciona.com) or the division's occupational risk prevention management tool.

As a noteworthy good practice, the Energy division prepares and publishes safety alerts on its website regarding incidents from which lessons have been learned that may be of interest to the sector (<https://www.acciona-energia.com/sustainability-innovation/health-and-safety/>).

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ACCIONA ENERGY PUBLISHES ON ITS WEBSITE **RELEVANT SAFETY ALERTS** FOR THE SECTOR BASED ON LESSONS LEARNED

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Meanwhile, and in line with the corporate activity, ACCIONA Energy runs initiatives to encourage and promote health.

ACCIONA Energy chairs the Global Wind Organization (GWO) for the promotion of global occupational health and safety standards in the wind energy sector. Its activity focuses on improving the safety profiles of sector professionals, particularly in countries with a lower level of technical qualification.

## THINK SAFE: PROMOTING THE PREVENTIVE CULTURE

The THINK SAFE programme, launched in 2017, aims to improve the culture of prevention among employees through an innovative learning system in which the active participation of the learner allows them to become more aware of their safety.

Employees who took part in 2018 gave positive feedback on the initiative. Its national rollout covers 93 % of the workforce.

It is estimated that over 2019, THINK SAFE will also be implemented internationally.

All of these initiatives ultimately aim to reduce the division accident rates. Nevertheless, in 2018, the frequency and severity rates showed an upswing compared to the previous year. Taking contractors into account, the rate reduced by over 40 %.

Thus, a total of eight accidents occurred among company employees, all of which involved males, and three of which were at the international level. Looking beyond this, no cases of occupational illnesses in the division were detected, nor were there any fatal accidents.

**EVOLUTION OF ACCIDENT INDICATORS  
FOR ACCIONA ENERGY EMPLOYEES**

	SEVERITY RATE				FREQUENCY RATE			
	2015	2016	2017	2018	2015	2016	2017	2018
Energy	39.8	17.1	7.9	17.7	1.6	0.5	0.4	0.5

Severity rate (no. of days lost due to work accident/hours worked) x 200,000.  
Frequency rate: (no. of accidents with loss of work/hours worked) x 200,000.

Among the objectives defined by ACCIONA Energy for 2019, the following merit special attention:

- To reduce the accident frequency rate with the loss of company and outsourced employees by 5 %, and increase the report of near-misses in the application of QSE by 5 %.
- To improve suppliers' performance by including specific health and safety criteria in internal audits and the definition of a new excellence audit model to carry out critical jobs.
- To complete the global rollout of THINK SAFE.
- To certify 10 % of companies that make up ACCIONA Energy under the standard ISO 45001.

**Health and safety in the energy supply chain**

ACCIONA Energy's work safety policy establishes that the requirements to prevent risks are the same for company employees as for outsourced employees. When they are contracted, every supplier must undergo a health and safety performance evaluation in order to minimise risks and set plans of actions to address any shortcomings detected during the audit. The company contract is conditional upon its effective implementation.

During this year, new measures were introduced in relation to contractors' performance in occupational health and safety across the entire project phase, from the bid to its completion. Some of the key measures are:

- To limit suppliers' and contractors' frequency rates in bids.
- To create a personalisation programme for tasks to be completed by contractors and carry out periodic on-site compliance assessments.
- Periodic monitoring of the contractor accident rate, requiring immediate action to be taken if the performance declines.
- To send letters of reprimand and impose contractual fines on contracted companies demonstrating repeated shortcomings.
- Final occupational health evaluation of the manager and the procurement area for future bids.

Furthermore, the division periodically organises 'Meeting Points' with suppliers to exchange experiences and agree on the action criteria on health and safety.

In 2018, contractors of ACCIONA Energy experienced a total of 43 accidents, none of which were fatal. All of those injured were male, and were 53 % at the international level.

**EVOLUTION OF ACCIDENT INDICATORS FOR ACCIONA ENERGY CONTRACTORS**

	SEVERITY RATE				FREQUENCY RATE			
	2015	2016	2017	2018	2015	2016	2017	2018
Energy	55	46.7	3.6	22.0	1.6	1.9	1.1	0.6

Severity rate (no. of days lost due to work accident/hours worked) x 200,000.  
 Frequency rate: (no. of accidents with loss of work/hours worked) x 200,000.

Contribution to society

ACCIONA Energy contributes to improving society with its projects as a leading company in the transition towards a renewable-based energy model. The positive impacts generated by its activity include different social dimensions: effects on people, in community life or in the generation of wealth and employment in the region. More than 264,700 people have benefited from the various initiatives carried out in ACCIONA Energy projects in 2018.

In order to manage and measure these impacts, the company uses three basic tools: Social Impact Management, measurement of the socioeconomic and environmental impact, and project-related social investment.

Social impact management

ACCIONA applies its own Social Impact Management (SIM) methodology, whereby, right from the tender or design phase, it knows the social risks that its works, operations or service provisions may cause in the areas of influence of its projects. Its aim is to generate positive impacts and minimise negative ones on the local communities and environment in which it operates.



Further information can be found in the section 'ACCIONA's Social impact management' in the 'Society' chapter

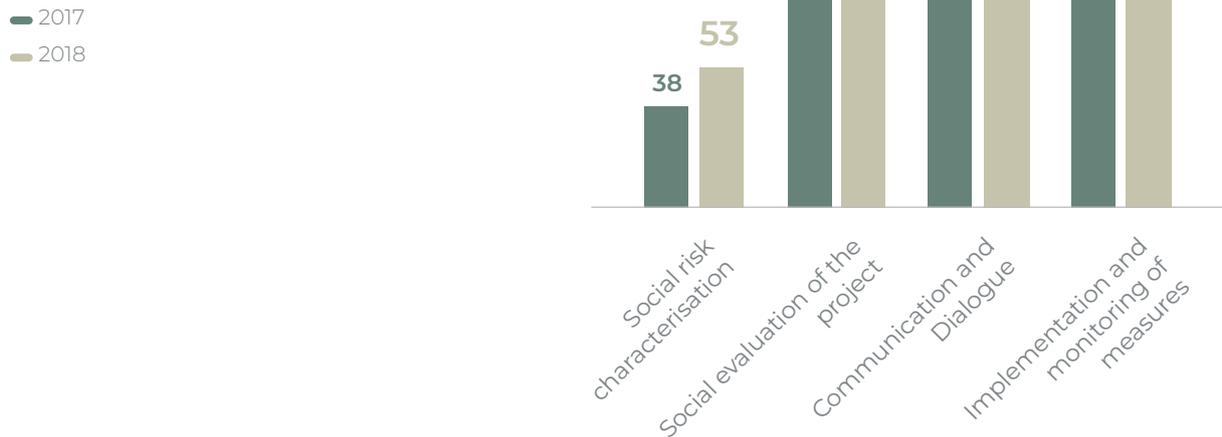
In 2018, ACCIONA Energy developed its social impact management in 17 wind farm and photovoltaic plant projects in 11 countries.

**EVOLUTION OF THE IMPLEMENTATION OF THE SIM METHODOLOGY IN ACCIONA ENERGY**

	2015	2016	2017	2018
No. projects	2	18	13	17

**STATUS OF THE IMPLEMENTATION  
OF THE PHASES OF THE SIM METHODOLOGY  
AT ACCIONA ENERGY**

(Percentage of the total projects of the Energy division with SIM)



Furthermore, external audits were performed on two Energy projects, with the aim of assessing the degree of implementation of the SIM methodology.

In 2018, ACCIONA Energy Australia signed the 'Best Practice Charter for Renewable Energy Developments' document as part of its participation in the Australian Clean Energy Summit. This is set out in a series of voluntary commitments to execute projects in a sustainable and responsible way, taking into account the values of the communities and trying to contribute positively to their development.

**ACCIONA ENERGY AUSTRALIA  
HAS SIGNED THE 'BEST PRACTICE  
CHARTER FOR RENEWABLE  
ENERGY DEVELOPMENTS'  
DOCUMENT THROUGH WHICH  
IT UNDERTAKES TO CONTRIBUTE  
POSITIVELY TO COMMUNITY  
DEVELOPMENT**

ACCIONA Energy assumes the Equator Principles as a tool for dialogue with stakeholders. The sixth principle establishes the need to create a Complaints Mechanism for the different stakeholders to express their concerns over a given project. ACCIONA Energy, in response to this commitment, makes a public form available to the people or groups that are considered affected, through which they can send queries and/or suggestions regarding any project promoted by the company. (<https://www.accion-energy.com/sustainability-innovation/queries-or-suggestions/>).

Specific communications channels are also established by project. In 2018, communications channels were identified in 100 % of SIM projects, through which the stakeholders affected by a project can submit their queries and/or suggestions, such as web forms, emails, telephones, suggestions boxes and community service offices, among others.

**Socioeconomic impact of projects**

ACCIONA has been measuring the socioeconomic and environmental impact of its projects since 2015. With the aim of finding out and enhancing the benefits that they generate throughout their entire life cycle, the company uses an economic model based on input-output tables (analysis of relationships between the various industries), in order to obtain quantitative results of the direct, indirect and induced impact of its activity on the employment and GDP contribution figures of each country, as well as on the environment and local communities.

In 2018, this methodology was used to measure:

- The impact of all of ACCIONA Energy's assets in 2018.
- The socioeconomic impact on 20 wind power and photovoltaic projects for their entire life cycle in Croatia, India, Australia, Chile, Mexico, United States, Ukraine and Spain.



Further information about the methodology in the 'Society' chapter

### Projects with noteworthy social actions in 2018



#### WIND FARMS AUSTRALIA

ACCIONA Energy operates four wind farms in Australia, totalling 434.5 MW of installed capacity: Cathedral Rocks in South Australia (64 MW), Gunning in New South Wales (46,5 MW), and Waubra and Mt. Gellibrand in Victoria (192 MW and 132 MW respectively). On top of these projects in 2018, there was also the award of Mortlake South, which will increase the installed wind capacity in the country by 35 % to 592 MW.

### SOCIOECONOMIC IMPACT

The socioeconomic impacts revolve around the local contribution to the GDP and employment generation during the entire life cycle of each of the projects. The aggregated indicators for all of the assets are listed below.

- Contribution to GDP: € 549 million.
- Employment generation: 4,730 job / year\*.
- Emissions avoided: 1.9 M t CO<sub>2</sub> per year.
- Water saved: 2.9 M m<sup>3</sup> water per year.
- Improvement of air quality: 12,980 t of SO<sub>2</sub> and NO<sub>x</sub> avoided per year.

### SOCIAL IMPACT MANAGEMENT

Managing the social impact on the Australian wind farms revolves around the company's commitment to maintaining a positive relationship with the community.

Through the community relationship plans established in the projects, the company hopes to achieve the following:

- Identify the main stakeholders in the projects.
- Create stable relationships with the community.
- Ensure that all stakeholders are informed and involved throughout the process.
- Detect any potential negative and positive impacts the project might have and propose measures to mitigate and/or enhance them.
- Provide two-way communication channels and dialogue between the company and the local communities, such as newsletters, community focus groups during the construction stage, events with the communities and free telephone information, among others.

These actions contribute to improving the participation of stakeholders and promote mutual trust.

### SOCIAL ACTION INITIATIVES

In 2018, the following actions are worthy of special mention, which together benefited over 107,700 people:

- Creation of a specific fund for the improvement of community infrastructure and running social events.
- Study grants to promote university attendance.

\* Jobs/year: full-time equivalent jobs for one year.



## PUERTO LIBERTAD (MÉXICO) PHOTOVOLTAIC PLANT

Construction of the Puerto Libertad photovoltaic complex, which has one of the largest capacities in the country and in Latin America with 317.5 MW nominal power.

### SOCIAL IMPACT MANAGEMENT

During the construction stage, positive and negative impacts were detected for which measures were put in place to mitigate or enhance them, as the case may be.

Some of the social measures carried out in 2018 include:

- Creation of a local labour exchange to maximise the positive impact on employment.
- Execution of a study on the capacity of local services and implementation of mitigation measures such as: ensuring access to water, healthcare services and the creation of stockpiling areas to collect urban waste.
- Communication and dialogue with communities and stakeholders before and during the construction of the project through:
  - Participation surveys.
  - A communication programme linking the company to communities located in the project's area of influence.
  - Ongoing community liaison in construction and operations.
  - Information seminars open to the general public.
- The implementation of the Sustainability Workshop, an environmental education programme for primary and secondary school pupils, which has benefited 400 children.

### SOCIOECONOMIC IMPACT

The socioeconomic impacts revolve around the local contribution to the GDP and employment generation during the entire life cycle of the project.

- Contribution to GDP: € 240 million.
- Employment generation: 7,463 jobs/year\*.
- Emissions avoided: 403,208 t CO<sub>2</sub> per year.
- Water saved: 619,615 m<sup>3</sup> water per year.
- Improvement of air quality: 1,908 t SO<sub>2</sub> and NO<sub>x</sub> avoided per year.

\* Jobs/year: full-time equivalent jobs for one year.



## JELINAK (CROACIA) WIND FARM

Wind farm with 20 wind turbines totalling 30 MW of power, capable of supplying energy equivalent to the consumption of some 30,000 Croatian homes.

### SOCIOECONOMIC IMPACT

The socioeconomic impacts revolve around the local contribution to the GDP and employment generation during the entire life cycle of the project.

- Contribution to GDP: € 29 million.
- Employment generation: 948 jobs/year\*.
- Emissions avoided: 48,542 t CO<sub>2</sub> per year.
- Water saved: 97,619 m<sup>3</sup> water per year.
- Improvement of air quality: 397 t SO<sub>2</sub> and NO<sub>x</sub> avoided per year.

\* Jobs/year: full-time equivalent jobs for one year.

## Social investment associated with the projects

Another way in which ACCIONA Energy manages its contribution to society, which it continued to push in 2018, is the development of social projects in the communities where it operates.



### EL CORTIJO (MEXICO) WIND FARM

First project linked to electricity auctions as part of the Energy Reform, which will generate clean energy equivalent to the electricity consumption of some 458,000 Mexican homes, avoiding the annual emission of over 429,000 tonnes of CO<sub>2</sub> into the atmosphere.

The following social initiatives in 2018 benefited a total of 4,600 people:

- Improvement of infrastructure in schools and health centres in areas bordering the wind farm.
- Vaccination campaigns.
- Educational campaigns for children as part of the Sustainability Workshop.
- Informational campaigns for young people through the 'Safe and Healthy Generation' drawing competition.

### ACCIONA ENERGY DONATES THE FIRST PHOTOVOLTAIC PLANT CONNECTED TO THE GRID ON EASTER ISLAND (CHILE)

ACCIONA Energy has donated a solar photovoltaic plant to Easter Island, the first to be connected to the electricity grid on the island, with the aim of creating a more sustainable electric system in this enclave, which currently uses diesel to generate all of the electricity it consumes. This initiative will avoid 8 % of the diesel consumption thus far devoted to electricity generation, and it will contribute to the development of the Rapa Nui community.

The installed photovoltaic system has 400 panels and was designed and built by ACCIONA. It will benefit approximately 7,750 inhabitants of the island.



### TUPPADAHALLI, ARASINAGUNDI AND ANABURU (INDIA) WIND FARMS

In the state of Karnataka in India, ACCIONA Energy runs social initiatives around the wind farms of Tuppadahalli, Arasinagundi and Anaburu, which, in 2018, benefited over 1,460 people:

- Launch of the 'Vocational skills training' programme for young people who have finished school to become certified in professional activities that improve their standard of living in the future.
- Creation of two computerised classrooms in two schools near the Tuppadahalli wind farm.
- Provision of material to give specific training courses to members of the community.
- Specific professional development courses for 300 young people in the communities bordering the project.

At the Bannur wind farm, in the same region, the infrastructure of some schools has been refurbished and improved. In addition, the second stage of the 'Read India' project was launched, which has helped over 1,530 boys and girls.

In the area of humanitarian aid, through the NGO ChildFund, ACCIONA Energy has contributed to the distribution of basic care kits to the homes most affected by the 2018 floods in the districts of Kerala and Kodagu, benefiting over 550 people. Furthermore, educational kits were distributed to the children affected.

## Environmental management and biodiversity

ACCIONA Energy's environmental management is hinged on the principle of improving environmental performance. Having strong management systems and a structure of responsibilities adapted to the reality of each country in which it operates is essential in order to perform with the highest environmental management quality standards.

With this aim, the various areas establish specific measures to minimise the environmental impact of their activities.

## Protection and conservation of biodiversity

The Energy division has its own fauna and flora conservation initiatives. The following stand out among those developed in 2018:

- Renovation of the 'El Cabrito' wind farm, Spain. ACCIONA Energy has concluded the renovation of this wind farm located in Tarifa, by replacing 90 obsolete wind farms with 12 equipped with the latest technology. Dismantling the old wind farm meant removing all the foundations, platforms, unnecessary roads and transformers, as well as the removal and management of waste and the topographical restoration of the land. By reducing the number of turbines by 7.5 times, it has significantly reduced the visual impact of the wind farm as well as the sound level, also aided by the improved technology of the turbines. Furthermore, the greater distance between the turbines and the slower blade rotation speed allows birdlife to pass through more easily.
- Ocelot Protection Plan, United States. As a result of the construction and operation of the 'Palmas Altas' wind farm, ACCIONA Energy has carried out a specific plan to protect the ocelot, a species categorised as endangered by the United States Fish and Wildlife Service. This plan involved technical training for all staff involved and establishing specific measures to avoid and minimise potential impacts on the species. For example, there is a speed limit for traffic and night visits are kept to a minimum, artificial light is reduced and a reporting, coordination and documentation process has been implemented in the event of sightings as well as a monitoring protocol.

## Risk management in sustainability

ACCIONA Energy ensures the adequate management of risks in terms of sustainability through a series of activities that are part of the continuous process of risk control and management.

## Project risk management

### General project risk management procedure

This procedure begins by evaluating new opportunities covering risks of all kinds, including over 30 environmental, social and good governance (ESG) scenarios. In 2019, a pilot project will be carried out to evaluate the ESG risks of a project in greater depth.

### Rating a project's social risk

As part of the Social Impact Management across all projects, a project's social risk is profiled according to various parameters, such as the type of activity, the country and other social issues as a step prior to the social management of the project throughout its life cycle.

## Other related risk control processes

### Analysis of environmental risks

In 2018, we updated the environmental risk analysis of our assets, achieving a certain reduction in risk as a result of the various action plans. Another key activity was the monitoring of those plans that were dedicated, among other aspects, to mitigating the impact on the fauna of the wind farms, to reducing the sound impact of the turbines or the number of forest fires.

### Climate change and water risk analysis

There are also other risk control processes aimed at covering other more specific aspects, but that are closely related to sustainability risks. Specifically, water risks and climate change risks are analysed on an annual basis. Both analyses ensure these crucial risks are managed properly in order to make sure the division acts correctly in its sustainability performance.

## General risk control processes

### Annual ESG risk assessment

A general ESG risk assessment is carried out each year. This assessment includes approximately 30 scenarios and is specific to each region in which it operates. In 2018, this assessment was consolidated by considering the changes in the company's operations and in its context.

### Consolidated risk map

In 2018, the first edition of this consolidated map was created, which encompasses the division's main risks and includes, at a high level, those risks that affect the sustainability of our activity.

## RISK MANAGEMENT IN SUSTAINABILITY



## Innovation in renewables

At ACCIONA Energy, innovation is an essential cornerstone through which to maintain a leading position in an increasingly competitive sector. Thus, the accredited innovation figure in 2018 amounts to EUR 61.8 million.

The savings verified by operational improvements in the processes amount to EUR 4.7 million.

THE ACCREDITED  
INNOVATION FIGURE IN 2018  
AMOUNTS TO

# 61.8

EUR MILLION

### EVOLUTION OF THE R+D+i FIGURE IN ACCIONA ENERGY

	2015	2016	2017	2018
Figure in Energy R+D+i (€M)	63	73.3	66.4	61.8

### RENEWABLE ENERGIES INNOVATION CENTRE

The Energy Innovation Centre, based in Pamplona with teams in Madrid and Mexico, carries out the innovation activity for ACCIONA's renewable energies in the areas of wind and solar energy, biomass, electricity storage and grid system integration. The company tests, characterizes and integrates the best technologies available on the market and collaborates with different manufacturers in new products to improve the cost and reliability of the energy generated.

Among the main milestones achieved in 2018, the following are noteworthy:

### *Blockchain to energy*

- ACCIONA Energy has applied blockchain technology to confirm the 100 % renewable origin of the energy injected in to the electricity grid from two facilities with storage in Navarra.



Further information can be found in the section 'Customer relations and services at their disposal' in this chapter.

- As part of the I'MNOVATION #Startups programme, ACCIONA Energy has developed a pilot project for a sales demonstrator that tracks renewable energy generated in Spain and customers in Portugal.

### Electrical storage area

- The wind energy storage plant with ACCIONA Energy batteries in Barásoain (Spain) was the first in the world to obtain total certification of its entire grid system. It is accredited under the GRIDSTOR procedure.

### On-shore wind area

- Maximisation of the power curve by implementing innovative control strategies for various models of turbines operated by ACCIONA Energy. In this regard, it has also worked on studying, implementing and validating noise reduction in wind turbines with different brands of blades.
- Installation in wind turbines of the first two 3D printed parts.

## **TURBINE FOR LIFE**

The company is firmly committed to improving the efficiency and extension of the useful life of the wind turbines in the most safe and reliable environment. With this in mind, the Turbine for Life programme seeks to carry out a diagnostic of the turbines' state of health, it provides predictive insight into their behaviour and facilitates recommendations relating to decisions on their operation and maintenance. This programme is based on the application of Big Data, machine learning and artificial intelligence techniques, as well as the use of physical and hybrid predictive models.

The programme contributes to reducing the operation and maintenance cost and to extending the useful life of those assets.

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## Solar photovoltaic area

- Progress in the operation and maintenance of photovoltaic plants during the year using robotics for cleaning and the recommendation of optimum cleaning frequency in desert environments.

### **LEAN PV CONSTRUCTION AT THE PUERTO LIBERTAD PHOTOVOLTAIC PLANT**

The activities carried out in the construction of the Puerto Libertad photovoltaic plant apply the lean manufacturing methodology to optimise the construction stage of large photovoltaic facilities. The goal is to reduce costs and deadlines in the construction of the plants, as well as to minimise the risks and variability of the processes and designs without compromising quality or safety.

In 2018, the cost reduction was strongly underpinned by a significant reduction in man-hours, as a result of contracting the aforementioned logistical model, as well as a drop in the machinery man-hours. The process improvements put in place allow the project to achieve a noticeably optimised execution time.

## Hydropower area

- 3D modelling of channels for their digitalisation and improvement in safety.
- Noise reduction in hydroelectric plants: the first active noise mitigation system prototype, as a preliminary step before applying it in a real plant environment.