

Innovation, and the use of knowledge

The inclusion of innovation in business practices, collaboration and the use of synergies of the divisions' specific know-how characterize the Company's R&D activities.

2013

Challenges	Advances
<ul style="list-style-type: none"> ■ Identification of operating innovations in key processes that generate a minimum of €4 million in savings. 	<ul style="list-style-type: none"> ■ Savings from process improvements amounting to €14.1 million.
<ul style="list-style-type: none"> ■ Generation of new patents and their monetization, with more than 100 patents. 	<ul style="list-style-type: none"> ■ Valorization of knowledge through generation and monetization of patents, with 111 patents granted or pending.
<ul style="list-style-type: none"> ■ Commitment to reach 100 million euros in Innovation 2013. 	<ul style="list-style-type: none"> ■ Documented figure of €173.2 million in 2013.
<ul style="list-style-type: none"> ■ Increased input of ideas from users through the platform for collecting innovative ideas of ACCIONA workforce (IMAGINNE). 	<ul style="list-style-type: none"> ■ A 125% increase in number of ideas, with total of more than 1,000 recorded ideas, of which 170 have been implemented.
<ul style="list-style-type: none"> ■ Adoption of Corporate Innovation Rules and establishment of procedures to implement the content of the rules. 	<ul style="list-style-type: none"> ■ Approval of <i>Corporate Rules: Managing Innovation</i> and implementation of the same through new procedures.
<ul style="list-style-type: none"> ■ Preparation of first Environmental Product Declaration (EPD) in a civil work. 	<ul style="list-style-type: none"> ■ First company in the world to obtain EPD certification for a civil engineering project. Railway viaduct in section of AVE train route from Madrid to Galicia, Spain.
<ul style="list-style-type: none"> ■ Start-up of DELPHOS tool by ACCIONA Observatory. 	<ul style="list-style-type: none"> ■ Start-up of tool for collecting information through a web platform with previously classified information repository.
<ul style="list-style-type: none"> ■ Perform market trend simulation by ACCIONA Observatory. 	<ul style="list-style-type: none"> ■ Performance of first market trend simulation and analysis of competitors in a strategic country.

2013

Highlights
<ul style="list-style-type: none"> ■ ACCIONA reached Open Innovation Agreements with three major multinational companies and the start-up that arose from a prestigious International Technology Center. ■ ACCIONA Infrastructure has won contracts for two mooring points in the application of compound materials in Puerto del Rosario (Fuerteventura) on the basis of its own patent, which has boosted the innovative capacity of its suppliers. ■ ACCIONA has consolidated its innovation processes in Saudi Arabia, Australia, Canada, Colombia, the US, United Arab Emirates, Italy, Namibia and Poland.
<ul style="list-style-type: none"> ■ ACCIONA has fostered sustainable experiences of technology transfer in the wastewater purification plants and in the wastewater pumping stations of Cieza, Spain, and the biomass plant of Briviesca, Spain. ■ The Technology and Competitiveness Observatory has expanded the number of users, in response to a request by 16 clients. ■ ACCIONA has consolidated the Committee of Analysis and Evaluation of R&D Input in all businesses.

2014

Challenges
<ul style="list-style-type: none"> ■ Exceed the innovation figure of €70 million, in line with the SMP 2015. ■ Boost innovation capacity of suppliers. ■ Foster Spanish and European initiatives related to innovative public procurement. ■ Consolidate the IMAGINNE platform by implementing the contributions proposed on the social network and giving feedback to participants. ■ Foster implementation of improvements in the Company's key processes to generate savings of at least €12 million.
<ul style="list-style-type: none"> ■ Implement <i>Corporate Rules: Managing Innovation</i> and adapt the monitoring tools. ■ Finish the revision and redefinition of strategic business innovation plans.

Ongoing commitment to innovation

Throughout 2013, ACCIONA has developed its innovation strategy, specifically in transferring innovation to the business by exploiting synergies arising from specific divisional know-how. The Company has also worked on adjusting research programs and financing instruments to the European Union's new Research and Innovation Framework for 2014-2020.

The main strategy lines in Infrastructure and Water have maintained their innovation figures, thus increasing even further the Company's daily activity, which constitutes the basis of ACCIONA's innovation work. In ACCIONA Energy, the evolution of renewable energy markets at a global level and, in particular, in Spain, has in turn refocused strategy towards the optimization of energy costs, reduction of operating and maintenance costs and energy storage.

World-renowned innovation

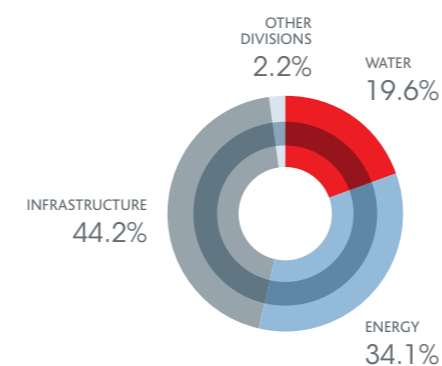
ACCIONA's position in the main rankings of innovation remains solid. The 2013 EU Industrial R&D Investment Scoreboard, developed by the European Commission's Economics of Industrial Research and Innovation (IRI), ranks ACCIONA as the fifth leading Spanish company by volume of investment and 143rd in R&D investment growth in the last three years.

The global consulting firm Booz & Company's world innovation ranking, which selects 1,000 publicly listed companies with the highest R&D figures, ranks ACCIONA at 461, a notable climb from 620 in the previous year.

Innovation Management is the tool ACCIONA uses to create value and to put new ideas at the service of the whole Company

ACCIONA's work continues to be noteworthy, as shown by the figures of projects certified by independent external bodies.

In 2013, ACCIONA recorded €173.2 million in Innovation, which is 4.2% higher than the previous year, the breakdown of which is as follows:



Furthermore, ACCIONA worked on 233 projects in the year, 128 of which were carried out in technology centers.

With respect to financing, there was a decrease in the coverage of innovation owing to the end of major CENIT projects and, generally due to the reduction of

outright grants in Spain, and the overlap of a succession of European programs. In this setting, ACCIONA worked with the European Investment Bank (EIB) on defining and documenting ACCIONA's new 2013-2016 innovation program, amounting to at least €240 million, which enabled the bank to grant a loan of €120 million.

With respect to news in public financing of innovation, ACCIONA is working on becoming one of the main actors in *innovative public procurement*, which is a new instrument within the "2020 Horizon" program, established by the EU, aimed at fostering demand-based innovation.

R&D MANAGEMENT

In 2013, the Company prepared new *Corporate Rules: Managing Innovation*. As part of the approval process, the document was submitted for comments by all concerned/involved parties in the R&D management process. The Corporate Rules aim to enhance innovation governance in accordance with its objectives, generate value, guide innovation towards business needs, open innovation to all concerned parties and involve the entire organization.

With the approval of these rules, ACCIONA has implemented new standards for the R&D management system as a whole, from technology monitoring and idea generation, to protection of results. The Company has also defined a series of indicators in its R&D management system that allow R&D developments and trends in business to be monitored on a four-monthly basis. The new system has been recognized by AENOR.

ACCIONA TECHNOLOGY CENTERS	
Madrid Technology Center	Focused on infrastructure innovation for transport and mining, sustainable construction, infrastructures in compound materials and process enhancement.
Pamplona Technology Center	Core of innovation activity for renewable energies, with the development of strategic lines of research in wind, solar photovoltaic, thermoelectric, biomass and integration of renewable energies in the power grid.
Barcelona Technology Center	Responsible for the main research lines for water management technologies, sewage treatment, water reuse, desalination and drinking water treatment processes, and distribution networks.

ANALYSIS UNIT TECHNOLOGY AND COMPETITIVENESS OBSERVATORY	
<p>As an ACCIONA analysis unit, the Technology and Competitiveness Observatory (T&CO) focuses on monitoring the competitive environment, expanding external knowledge networks through arrangements with third parties, and on continuously improving analytic processes of drawing conclusions and disseminating the research results.</p> <p>The activities of the Technology and Competitiveness Observatory in 2013 included:</p>	
Support services to internal customers	The T&CO has responded to requests from 16 clients, 9 more than in 2012.
Internal dissemination	<p>Organization of five workshops:</p> <ul style="list-style-type: none"> ■ Presentation of "Megatrends - Impact and Opportunity Matrices", which highlights the substantial social and technology changes that are altering the environment in which ACCIONA operates. ■ Open Innovation and Technology Intelligence workshops on open innovation models on an international scale. ■ Two workshops with leading European companies in the CSP and biomass sector, with the aim of identifying potential areas of collaboration for ACCIONA. ■ Workshops for identifying systems and processes for reducing CO₂ emissions, their capture and storage.
External dissemination	In 2013, the Observatory took part in the following conferences: "CiMi.CON 2013" and "Strategic and Competitive Professionals" (SCIP).
DELPHOS tool	This tool was started up by DELPHOS and allows information to be obtained from non-structured sources in decision-making settings.
Market trend simulation	Market trend simulation carried out in country of interest, with analysis of scenarios and competitors, thus allowing for the design of strategies to enter and stay in that market.
Analysis methodologies and tools	Using open-source software, ACCIONA has developed its own analysis tools, the methodology of which consists of searching for, classifying and analyzing large volumes of data.



IMAGINNE Platform

IMAGINNE is ACCIONA's innovation social network, a tool fostering online gathering of proposals from Company employees.

Use of the network considerably grew during the year. In 2013, IMAGINNE went from 1,484 users and 450 ideas to more than 2,100 users and over 1,000 innovative ideas, of which over 170 have been, or are in the process of being, implemented.

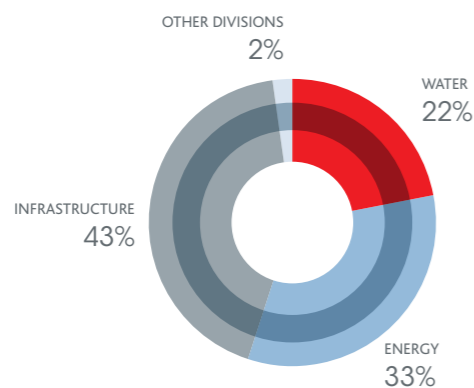
BUSINESS INNOVATION AND INTERNATIONAL EXPANSION

The value of the Company's innovation activity is revealed by the transfer of technology from results to business.

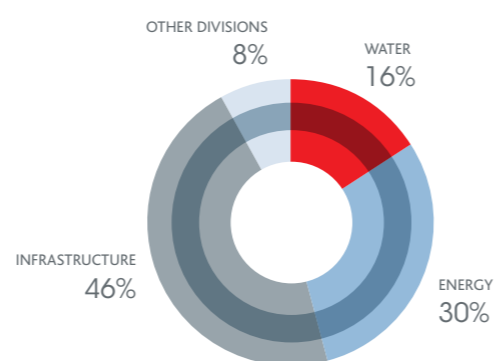
As a result of the overall innovation activity during the year, ACCIONA registered a total of 105 business innovation projects and a documented and third-party certified figure of €145 million. This represents 84% of ACCIONA's total innovation.

A total of 16 international projects were in the pipeline, with an associated figure of €48.6 million. As of December 2013, some 28% of ACCIONA's total innovation was taking place outside Spain. Throughout the year, actions were carried out in the following countries: Saudi Arabia, Australia, Brazil, Canada, Colombia, the USA, United Arab Emirates, Italy, Namibia and Poland.

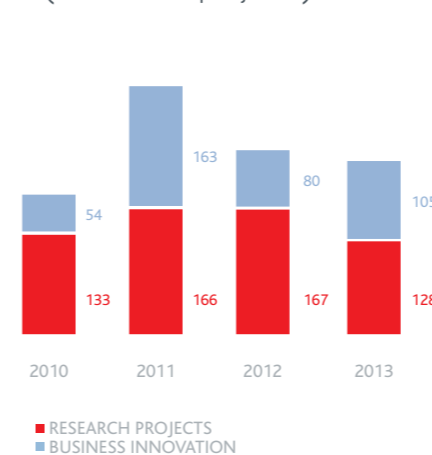
→ Business innovation figure, by division, in 2013



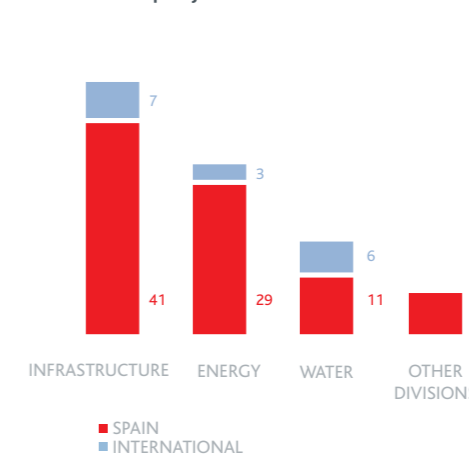
→ Business innovation projects, by division, in 2013



→ Project portfolio (Number of projects)



→ Geographical breakdown of the projects in 2013



KEY PROJECTS IN 2013

Integration of renewable energy management systems and energy consumption control. Hybridization of renewable energies.

ACCIONA has provided its clients with the first two systems of control and management of hybrid photovoltaic and wind-powered facilities in a wastewater purification plant and a wastewater pumping station.

This innovative system allows for online control and monitoring of every component of the renewables facility, and of energy consumption in the plant.

New systems of water capture, regulation and control in the solar thermal plant at Morón, Spain.

The locations with the greatest potential for the installation of thermoelectric solar plants are those with the best conditions of solar radiation. Such sites are characterized by being particularly dry. For this reason, the project focused on the technology challenge of building a system for the recovery, storage and control of surface rainwater, with the aim of reducing the project's water dependence.

EFFICIENCY IN OPERATIONS, ENHANCING PROCESSES

Improving efficiency in operations is one of ACCIONA's long-term goals, as set out in the 2015 Sustainability Master Plan in the area of innovation.

In 2013, ACCIONA made improvements in its processes that brought savings of €14 million, thus surpassing the goal of €12 million set for the year.

Efficiency in operations, improving its processes, represented a savings of €14 million for ACCIONA

THE MOST NOTEWORTHY IMPROVEMENTS TO PROCESSES IN 2013 WERE:

Improved efficiency in industrial logistics services
The initiatives of ACCIONA Service, which are based on reengineering of processes and Lean Management applied to logistics, have generated overall savings of €4.3 million.

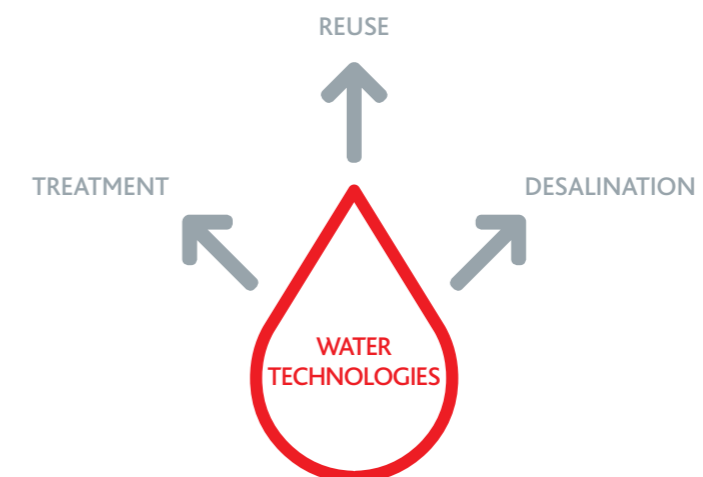
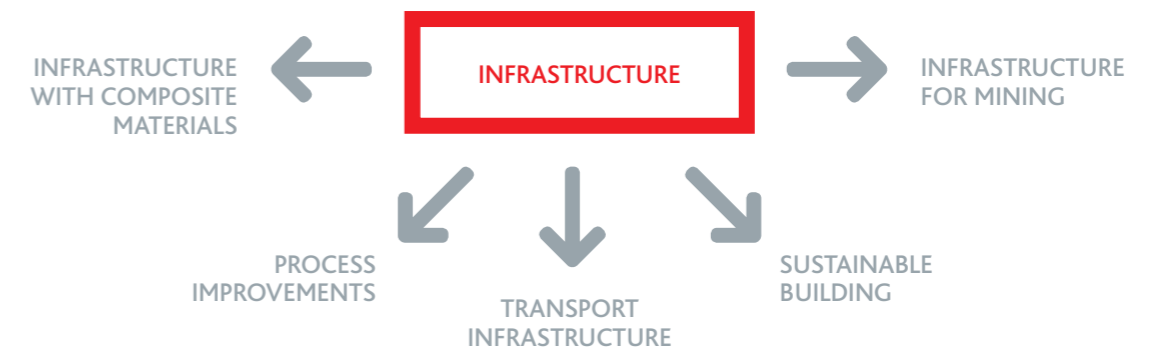
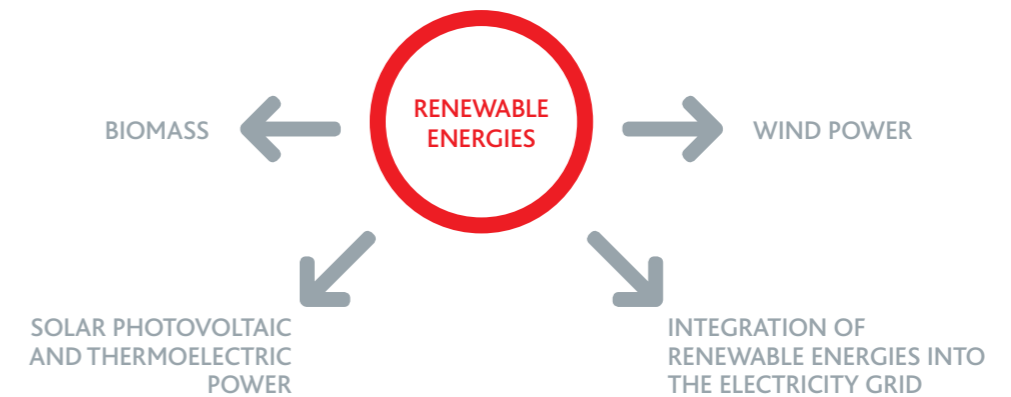
Valorization of urban solid waste in mechanical-biological plant at Botarell, Spain
ACCIONA has achieved an improvement in the recovery rate of usable materials and of organic matter, the non-emission of 11,726 kg of sulfur dioxide by new equipment in desulfurization lines, savings in clean water consumption and the non-generation of 2,266 m³ of sludge.

Optimization of energy consumption in purification processes
A wastewater purification plant reduced its consumption of power from the grid by 16% through the integration of renewable energies.

Co-digestion of sludge
This innovation has increased biogas cogeneration for plant own-consumption, thus reducing usage of power from the grid in the Abrera wastewater purification plant (Spain) by 7%.

Quality and reduction of time periods in construction of tunnels
This was achieved through the implementation of a tunneling machine control and viewing system.

STRATEGIC R&D LINES IN ACCIONA



The following projects were noteworthy in 2013:

- A cost of energy (COE) project was launched, the aim of which is to reduce the Cost of Energy (COE) while maintaining the product quality of ACCIONA Windpower and its features. The result in 2013 was highly satisfactory, having achieved validated and implemented changes that brought about an expected reduction in the COE of 12% on 2012.
- As part of the European project ILIS, ACCIONA Energy continued and completed its final trials of the system of ion-lithium batteries at its photovoltaic plant of Tudela, Spain. This is the first experience in Europe of the real operation of a photovoltaic plant on an industrial scale, with the incorporation of batteries to ease the power fluctuations that are typical of photovoltaic production and which will have a commercial application in the photovoltaic plant that ACCIONA is building in Sishen, South Africa.
- The MULTIBIOM project aims to increase the performance of biomass plants through the implementation of new moisture measurement systems, improved control of air combustion in the furnace and analysis of corrosion, among others. In biomass logistics, ACCIONA is participating in the LogisTEC project (Logistics for Energy Crops Biomass).
- ACCIONA designed and planned the Canary Islands Ocean Platform (PLOCAN) project, the first offshore platform of its kind ever installed in Spain.
- A new plate-based track system has been developed, intended for use in high-speed rail lines, and to be both economically and environmentally sustainable.
- A mobile modified bituminous mix production plant has been launched that, owing to its great elasticity, achieves better service life on the roads in which it is used. This development makes ACCIONA a leader over its direct competitors due to the innovative formulation of mixtures with low-cost additives.
- In 2013, the launch was executed of each of the units composing the experimental zero-emission tri-generation plant at Seville, Spain, and different operating strategies have been established and programmed within the plant's control system.
- As part of purification and reuse processes, ACCIONA is working on research into the disposal of nitrogen through partial nitrification combined with Anammox. In 2013, two new projects were launched in this field: NIPARMOX and BIOAVANT.
- ACCIONA's PRONAOS project is researching the use of natural products with coagulant and/or flocculant properties that meet one or more of the following requirements: they are compliant with current law, easily biodegradable substances, and considerably reduce the environmental impact of the use of synthetic products of this kind. This project is also developing the combined use of micro-filtering and ultra-filtering membranes with different absorbents in the disposal of hydrocarbons, oil and grease in water to be treated.
- The *SmartWater4Europe* project aims to develop a network and platform (hardware and software) to monitor the control and automatic action of infrastructure in the core grid of urban water supply, to allow for predictive maintenance in order to reduce consumption and optimize the efficiency of infrastructure. ACCIONA has chosen Cáceres, Spain, as the site of its demonstration activities, where more than 35% of the city will benefit, with monitoring of 74 km of the piping network.

First Spanish construction company to obtain EPD certification for a civil engineering project

The Environmental Product Declaration (EPD) is a certified environmental declaration of international validity prepared in accordance with ISO standards 14025 and 14040-44, relating to the Life Cycle Assessment (LCA) of a product or service. The purpose of EPDs is to provide quantitative, transparent, verified and comparable information on the environmental impacts that may be caused by a product or service throughout its life cycle.

The Environmental Product Declaration obtained by ACCIONA Infrastructure describes, from a life-cycle perspective, the total environmental impact associated with a railway viaduct on a section of the high-speed AVE line from Madrid to Galicia (Spain).

The life cycle assessment of the viaduct includes both the production of different materials (including transport of materials from the place of production to the work site) and the construction itself of the infrastructure.

Design and execution of the Al-Jubail pilot desalination plant in Saudi Arabia

ACCIONA won a contract for the Al-Jubail desalination plant in Saudi Arabia, which includes UltraDAF® technology, an innovative quick-floating system capable of working at higher hydraulic loads, thus reducing investment costs by 30%.

To test the functioning of the desalination plant, a pilot plant has been designed and executed. Its main feature is its mimetic UltraDAF® design of the desalination plant. In addition, the pilot plant is automated and controlled by PLC (Programmable Logic Controller), and it is equipped with SCADA (Supervisory Control and Data Acquisition) display support.