



# environmental dimension

a. climate footprint

b. process efficiency and  
management excellence

# climate footprint

## 2009 milestones

- Implemented the Climate Change Plan, which is part of the 2010-2013 Strategic Plan.
- Started up Alvarado I, ACCIONA's first solar thermal plant in Spain.
- Registered the Yeong Yang (Korea) project as a Clean Development Mechanism (CDM).
- Registered the Red Hills Wind Farm project under the Voluntary Carbon Standard.

## 2010 goals

- Advance the objectives of the Climate Change Plan.
- Lead the EU's MARINA project, which seeks to integrate a number of marine renewable energies on a single platform.
- Register three new projects as CDMs in Mexico.
- Create an Energy Efficiency Improvement Group at ACCIONA Trasmediterranea to draft a standard Energy Efficiency Plan for a conventional ferry.

## ACCIONA's commitment

ACCIONA is working effectively and diligently to tackle the socioeconomic risks arising from climate change. The Company is a standard-setter in transforming the risks arising from this global challenge into opportunities for success and distinctive characteristics of its businesses.

ACCIONA's activities are based on a portfolio of innovative low-carbon projects and solid, committed growth policies. The Company is committed to business models which anticipate market trends and

society's expectations, responding to global demands for energy, infrastructure and water with sustainability as its focal point.

ACCIONA's climate strategy, supported by the Climate Change Plan within the 2010-2013 Business Strategy Plan, remained in force in 2009. Those strategies have enabled the Company to significantly reduce its "climate footprint" in the last four years.

ACCIONA's Climate Strategy is based on the following:

- Monitoring and tracking emissions generated and avoided.
- Reducing emissions internally via energy efficiency initiatives.
- Monitoring and creating opportunities in products and services (innovation and new markets).
- Using carbon mechanisms and markets, including projects under the Kyoto Protocol, to expand abroad.
- Raising awareness and encouraging participation and debate about climate change.

**The 2010-2013 Strategic Plan foresees an ambitious reduction in the carbon footprint of the Company's activities**



## Climate Change objectives and goals

The 2010-2013 Strategic Plan includes an ambitious reduction in our activities' carbon footprint via the Climate Change Plan.

The Climate Change Plan aims to increase the current positive net balance from 7.59 million to 14.8 million metric tons by 2013, which means:

- reducing emissions by 10% by 2013 (from 1.11 million to 1 million metric tons);
- increasing avoided emissions by 86% by 2013;
- and, therefore, increasing the net emissions balance by 100% with respect to 2009.

Attainment of these goals would mean that:

- ACCIONA's contribution would account for 0.5% of the total reduction in 2013 needed to attain the International Energy Agency's proposal to stabilize global CO<sub>2</sub> concentrations at around 450 ppm.
- ACCIONA's contribution towards the objectives set by the European Union for 2020 would be 2.6% in 2013.
- ACCIONA's contribution in Spain to the EU objective would be 11.2% in 2013.

## ACCIONA's global commitment

ACCIONA believes that an effective way to fight climate change is to adopt public commitments.

In this vein, in 2009, the Company attended the Climate Change Summit in Copenhagen, where it supported the drafting of an ambitious, solid, fair framework agreement on climate change to replace the Kyoto Protocol.

In Copenhagen, ACCIONA's Chairman participated in a working group at the conference organised by the World Business

Council for Sustainable Development (WBCSD), alongside a number of business leaders who are in the forefront in the area of sustainability; the goal was to provide the private sector's perspective.

In his presentation, the Chairman highlighted a number of key areas where companies can make sustainability and greenhouse gas emission reduction a focus of strategic planning and action; the two key issues should also be backed by political agreements and implemented in national legislation.

ACCIONA also launched its global 'Re\_' campaign in Copenhagen, which invites people to work together and adopt solutions to today's problems, such as climate change, among many others.

For more information, visit WBCSD at: [www.wbcsd.org](http://www.wbcsd.org)

## Fundación Entorno-BCSD Spain Working Group for Climate Change and Energy

ACCIONA is a participant in this multi-sector platform in which 21 companies work to identify business opportunities in the low-carbon economy. The working group focuses on analysis and dissemination of innovative business practices and dialogue with public administrations. All these actions contribute to the debate on energy and climate change internationally, in Europe and in Spain, and they exemplify the motivation and commitment of the companies involved. The working group was created in 2006 with a view to:

- Analyzing and researching energy sustainability, and mitigation of, and business adaptation to, climate change.
- Encouraging debate on how to implement a sustainable transition to a low-carbon economy.

- Establishing communication channels and dialogue with Public Administrations, society and other stakeholders.
- Contributing, by pooling experience, to the dissemination of best practices among Spanish businesses so as to adapt to and mitigate this global problem.

This working group is part of the global group established by the World Business Council for Sustainable Development; through analysis and debate, it contributes towards defining the position of Spain's business segment within the Council in global debates on climate change and energy.

## ACCIONA signs Copenhagen Communiqué on Climate Change

ACCIONA is one of the signatory companies of the Copenhagen Communiqué on Climate Change presented to UN Secretary-General Ban Ki-moon by the Corporate Leaders Group on Climate Change. The Communiqué includes the specific measures to mitigate climate change that the Group proposed to global political leaders at the Copenhagen Summit.

## CO<sub>2</sub> Action - business commits to reducing carbon

ACCIONA participated in the CO<sub>2</sub> Action programme, the first voluntary multi-sector initiative in which Spanish companies set carbon emission reduction goals. Eighteen companies participated in the initiative in 2009.

In line with last year, the 2009 report describes the significant actions undertaken by participating companies with a view to meeting

their reduction targets.

These are emission mitigation measures implemented in activities that are unrelated to the companies' production processes. ACCIONA's noteworthy action is its Environmental Efficiency Plan - Operation "Butterfly Effect" - whose goals are to optimize energy and water consumption and minimize waste generation at work centres.

In **2009**  
ACCIONA cut its  
emissions by **13%**  
with respect to **2008**

## Carefully monitoring ACCIONA's emissions

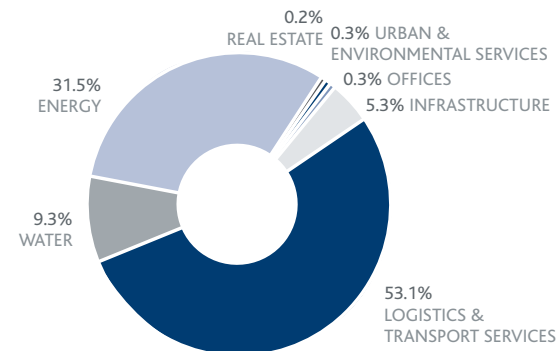
ACCIONA's activities and projects consume energy directly and indirectly, with the consequent greenhouse gas (GHG) emissions.

In 2009, the Company maintained its trend of reducing GHG emissions: Total emissions amounted to 1.11 million metric tons of CO<sub>2</sub> from total energy consumption of 16,079 TJ.

Emissions in 2009 declined 13% with respect to 2008.

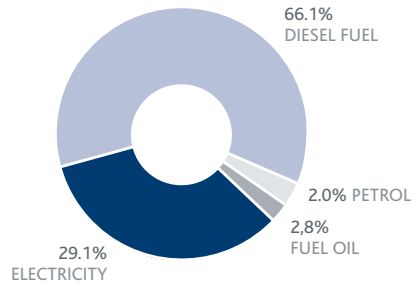
Logistics and Transport Services was the business line with the greatest emissions, accounting for 53.1% of the total. This division reduced its CO<sub>2</sub> emissions by 20% with respect to the previous year.

Group CO<sub>2</sub> emissions by business area, 2009



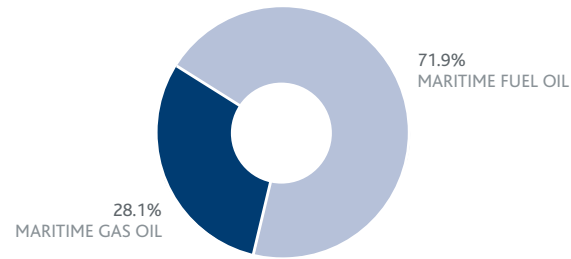
ACCIONA Infraestructure

774 TJ IN 2009



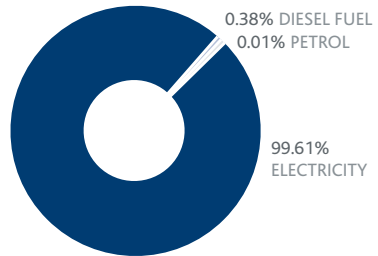
ACCIONA Logistics & Transport Services

7,748 TJ IN 2009



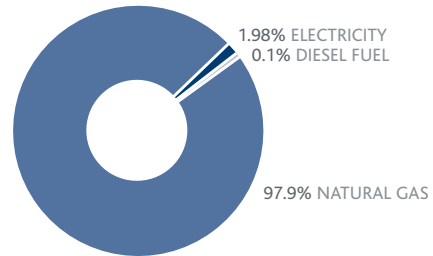
ACCIONA Agua

1,240 TJ IN 2009



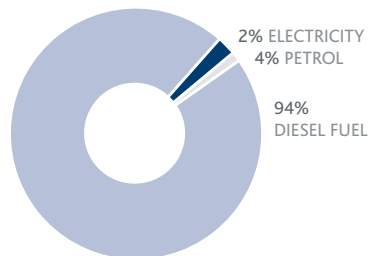
ACCIONA Energy

6,197 TJ IN 2009



## ACCIONA Urban &amp; Environmental Services

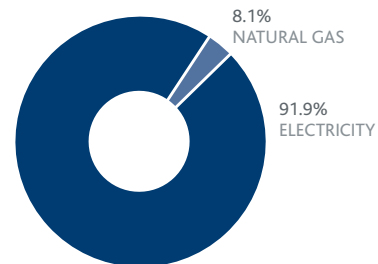
39 TJ IN 2009



Energy and carbon intensity indices continued to improve in 2009. Intensity indices, which are calculated with respect to ACCIONA's annual revenues, fell by approximately 10% in 2009. Energy consumption and GHG emissions declined by around 12%; as a result, energy and carbon intensity indices improved with respect to 2008. In 2009, energy intensity dropped by 45.8% with respect to 2004, while carbon intensity fell by 44.5%.

## ACCIONA Offices

46 TJ IN 2009

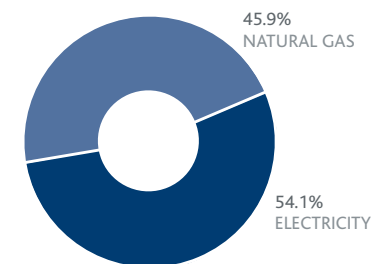


The fifth consecutive improvement in these indices is attributable to undertakings by all ACCIONA divisions to fulfil the commitments established in the energy efficiency policies. ACCIONA aims to further improve the indices with its 2010-2013 Environmental Efficiency Plan.

These positive results were reinforced by the fact that the scope of data collected to calculate GHG emissions included new

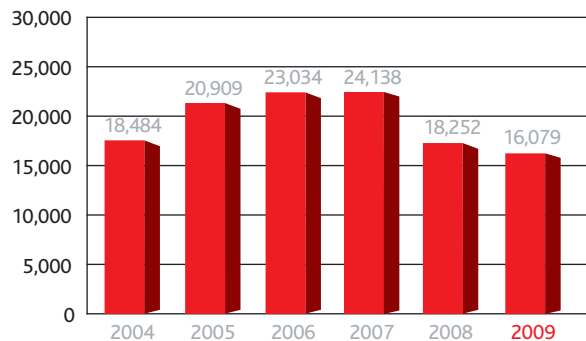
## ACCIONA Real Estate

31 TJ IN 2009

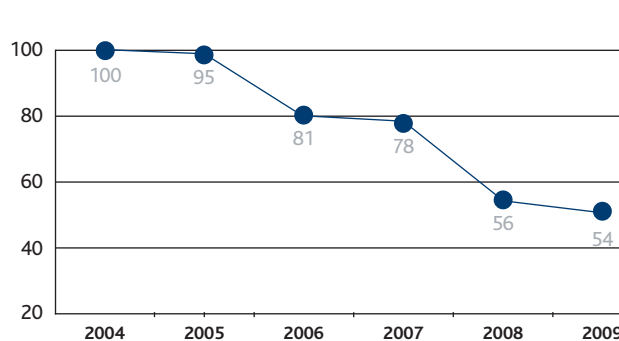


facilities not included in previous years, i.e. more ACCIONA Agua desalination plants, wind farms in other countries, international projects by ACCIONA Infrastructure, and ACCIONA head offices. This expansion in scope resulted in a 4% increase in the energy consumption and emissions that were logged.

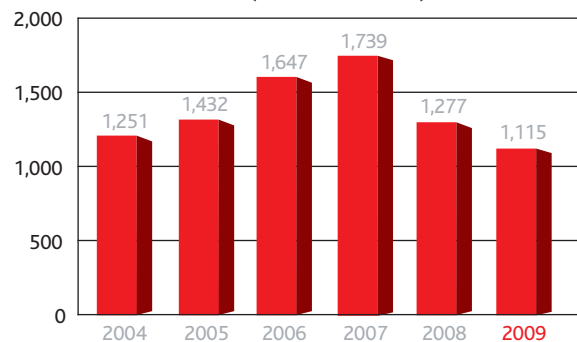
Energy consumption, TJ



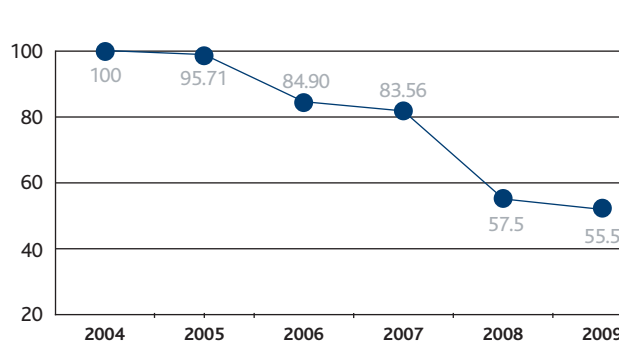
Energy intensity index (TJ/€ revenues)



CO<sub>2</sub> emissions (th. metric tons)



Carbon intensity index (TCO<sub>2</sub>/€ revenues)



For the fifth year in a row, carbon and energy indices have improved significantly



## Businesses which avoid emissions

ACCIONA operates under sustainable business models which encourage innovative, low-carbon projects that help mitigate climate change. These projects reflect ACCIONA's pioneering spirit and are the foundation for modern, profitable, competitive businesses.

ACCIONA's divisions have expanded their project portfolios based on sustainable solutions, using renewable energies to generate electricity, biofuel production, businesses associated with sustainable transport and building efficiency.

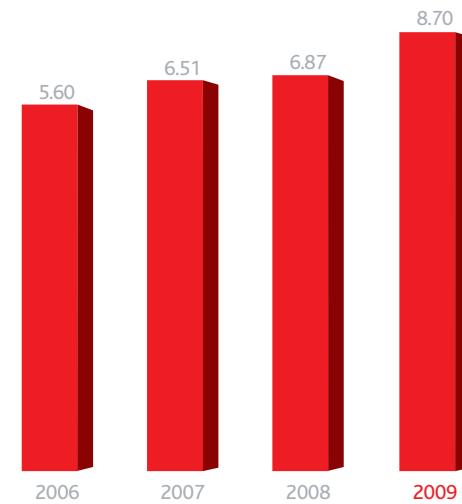
### EMISSIONS AVOIDED IN 2009

In 2009, ACCIONA increased the CO<sub>2</sub> emissions avoided by its products and services for the fourth consecutive year. Last year, gross emissions avoided amounted to 8,696,601 metric tons of CO<sub>2</sub> i.e. 1,824,015 metric tons more than in 2008.

ACTIVITY	TCO <sub>2</sub> AVOIDED
COGENERATION	175,540
RENEWABLE ELECTRICITY	7,843,530
WIND TURBINE GENERATOR (WTG) PRODUCTION	111,616
TRANSPORT: MODAL CHANGE	45,475
BIOFUELS	399,024
WASTE	120,518
ECO-EFFICIENT BUILDING	898
<b>TOTAL</b>	<b>8,696,601</b>

In **2009**,  
ACCIONA increased the  
volume of CO<sub>2</sub> emissions  
avoided by its products  
and services by 27%

Emissions avoided (millions of metric tons of CO<sub>2</sub>)



### SUSTAINABLE POWER GENERATION

Through its Energy division, ACCIONA undertakes to demonstrate the technical and economic viability of a new innovative and sustainable energy model. ACCIONA generates power using renewable energies and more efficient systems (e.g. cogeneration).

ACCIONA operates with a number of renewable technologies: in addition to being one of the largest wind power developers and operators in the world, it also develops other technologies such as hydroelectric, solar thermoelectric, solar photovoltaic and biomass.

In 2009, ACCIONA increased its installed capacity through the acquisition of 2,079 MW from Endesa (1,227 MW wind and 852 MW hydroelectric). ACCIONA also installed

488 new MW in 2009 (i.e. a 10% increase not including the Endesa assets). ACCIONA's installed capacity at the end of 2009 was 7,437 MW, through which the Company produced 13,569 GWh, 40.5% more than in 2008.

ACCIONA was the company with the greatest installed wind capacity in Spain in 2009, according to the Spanish Wind Energy Association. Moreover, the Company continued to strengthen its global foothold: 36% of its installed capacity is outside Spain.

In 2009, ACCIONA opened Alvarado I, its first solar thermal plant in Spain. The Company also has two more solar thermal plants under construction and a number of projects in various stages of development.

## ACCIONA was the company with the greatest installed wind power capacity in Spain in 2009

### ACCIONA ENERGY'S INSTALLED CAPACITY AT 31-12-2009 (MW)

WIND	6,230
HYDRO	911
BIOMASS	33
SOLAR THERMOELECTRIC	114
SOLAR PHOTOVOLTAIC	49
COGENERATION	100
<b>TOTAL</b>	<b>7,437</b>

## ACCIONA puts its faith in innovation

ACCIONA Energy's R&D and Innovation activities aim to develop technological processes and solutions which enable it to offer competitive products aligned with sustainable energy models. ACCIONA has made a clear commitment to renewable technologies in energy supply: it has various research lines in progress, from hydrogen to biofuels, as well as solar and wind technologies, both onshore and offshore.

One of ACCIONA Energy's most ambitious challenges in R&D is heading the European research consortium MARINA (Marine Renewable Integrated Application Platform).

The goal of MARINA is to lay the technological foundations for viable, competitive deep-water integration of a range of renewable energies such as wind, wave and ocean currents. The design goal is an installation with capacity in excess of 1,000 MW.

## Inauguration of Alvarado I, ACCIONA's first solar thermal plant in Spain

ACCIONA inaugurated its first solar thermal plant in Spain in Alvarado (Badajoz, Extremadura). The 236-million-euro facility has an installed capacity of 50 MW and will supply 28,000 homes. The plant will avoid the emission of 55,998 metric tons of CO<sub>2</sub> each year.

Alvarado I spans 130 hectares, i.e. equivalent to 170 football pitches. It is equipped with 184,320 mirrors in rows and 768 solar collectors spanning almost 74 kilometres.

ACCIONA has had an operational centre in the Nevada desert since 2007 using the same parabolic trough technology it is now implementing in Spain.

An advantage of solar thermal plants is that maximum production coincides with peak hours of the day, when air conditioning demands are greatest. Therefore, they meet demand during peak periods.

With  
**250.5 MW**  
of total capacity,  
the Eurus wind farm  
in Oaxaca, Mexico,  
is the biggest in  
Latin America



## ACCIONA completes construction of Latin America's largest wind farm, in Mexico

The Eurus wind farm (Oaxaca, Mexico), developed by ACCIONA Energy and Cemex, comprises 167 ACCIONA Windpower-designed wind turbine generators (WTGs), each of 1.5 MW. The total cost was 550 million dollars.

The 250.5 MW Eurus facility is the largest in Latin America and the largest ever built by ACCIONA. Upon registration with the

UN as a CDM (under the Kyoto Protocol), it ranked second among wind farms in terms of emission reductions.

Energy generated by Eurus will meet the needs of 500,000 people; the facility will avoid the emission of close to 600,000 metric tons of CO<sub>2</sub> per year, i.e. roughly 25% of total emissions generated by a city of that size.

## ACCIONA starts up 192 MW wind farm in Australia

Investment in the wind farm, located in Waubra (Victoria), totalled 270 million euros. It comprises 128 ACCIONA turbines.

Waubra will generate clean energy equivalent to the needs of 140,000 Australian households, avoiding the emission of 635,000 metric tons of CO<sub>2</sub> into the atmosphere each year.

## A meter to measure emissions avoided

ACCIONA's avoided-emissions meter, which seeks to increase transparency and raise awareness about the importance of renewable energies in mitigating climate change, has been running for three years.

The meter generates a weekly report on the website with the CO<sub>2</sub> emissions avoided due to ACCIONA's renewable output.

The data is sourced from ACCIONA's Internal Control Centre, and the system uses emissions factors from reliable international sources.

### NEW SOLUTIONS FOR SUSTAINABLE TRANSPORT

Transport is one of the principal sources of GHG emissions.

ACCIONA is working diligently to find environmentally-sustainable, low-carbon mobility solutions that lead to strategic, competitive advantages in the markets where it operates.

ACCIONA's strategic approach to this area is focused on two areas: biofuel production and the search for alternatives to road transport.

### ACCIONA'S BIOFUELS

In 2009, ACCIONA opened a 200,000-tonne biodiesel plant in the Port of Bilbao.

This is the Company's second plant of its kind, and it produces biodiesel from refined vegetable oils (soy, canola and palm).

The start-up of this plant increased ACCIONA's production of biodiesel to 270,000 metric tons and bioethanol to 26,000 metric tons.

The biodiesel is produced from canola, soy and palm oils. Commitment to sustainable production of the above materials is a priority

for ACCIONA. To this end, ACCIONA Energy requires that its suppliers explicitly commit to sustainable production practices. ACCIONA only buys soy from companies belonging to the Round Table on Responsible Soy (RTRS)<sup>1</sup>, and palm oil from member-companies of the Roundtable on Sustainable Palm Oil (RSPO)<sup>2</sup>. Both organisations seek to ensure sustainable production of those raw materials. ACCIONA sources canola oil from Europe, and it is therefore subject to all of the EU's environmental and social requirements.

<sup>1</sup> Round Table on Responsible Soy:  
<http://www.responsiblesoy.org>

<sup>2</sup> Roundtable on Sustainable Palm Oil: <http://rspo.org>

**Our strategy is focused upon innovation and the search for alternative solutions with low energy consumption**



### **ACCIONA Biofuels uses microalgae to produce biodiesel**

ACCIONA is building a pilot plant to grow microalgae for biodiesel production. It has made progress in two areas: defining and designing photobioreactors, and selecting and adapting the right microalgae.

ACCIONA seeks to encourage development of algal culturing for bioenergy purposes. The use of microalgae for biofuel production is advantageous in that the algae is not suitable for human consumption and, therefore, its use does not increase the demand for basic foodstuffs, avoiding unsustainable price increases in certain areas.

### SHORT-SEA SHIPPING

ACCIONA remains committed to short-sea shipping routes, which connect two points using intermodal transport, cutting logistical costs and reducing GHG emissions derived from road transport.

According to an International Maritime Organization study entitled "Prevention of air pollution from ships" (April 2009) and studies carried out within the European Climate Change framework set out in the White Paper on Transport, an intermodal journey based on short-sea shipping is

between 2 and 2.5 times less polluting than other means of traditional transport.

In 2009, ACCIONA operated four short-sea shipping lines linking Agadir (Morocco) with Barcelona, Barcelona with Cadiz, the Canary Islands and Alicante with Cadiz, and Vigo with Saint-Nazaire (France). Estimates indicate that these lines took 37,144 trucks, 4,459 cars, 1,239 buses and special vehicles and 81.319 cars (as cargo) off the road, avoiding the emission of 45,475 metric tons of CO<sub>2</sub> into the atmosphere.

## Energy efficiency at ACCIONA Trasmediterranea

ACCIONA Trasmediterranea's Energy Efficiency Plan, implemented in 2008 to reduce vessel fuel consumption and emissions, has expanded to include activities such as route surveillance, optimal sailing speeds in terms of fuel consumption, connecting certain fast ferries to the electricity grid when in port, and the gradual phasing out of pure coolant gases, which are harmful to the ozone layer.

The Plan also includes switching the ferry Sorolla from conventional propellers to the more fuel-efficient CLT propellers, thereby reducing fuel consumption (by 8.47%) and CO<sub>2</sub> emissions.

The implementation of some of these measures has saved 2,672.4 metric tons of fuel, avoiding the emission of 8,310 metric tons of CO<sub>2</sub> into the atmosphere.

**BUILDING WITH GREEN TECH AS A  
MEANS OF REDUCING EMISSIONS**

Through its R&D and Innovation departments, ACCIONA is advancing in the search for and use of new materials and technologies in its real estate projects so as to reduce material intensity and energy consumption and, therefore, CO<sub>2</sub> emissions.

ACCIONA Real Estate focuses on buildings which incorporate both technical saving measures and innovative solutions. These measures incorporate renewable technologies


and bioclimatic architecture features in the construction process to adapt buildings to the local climate and resources.

ACCIONA Installations provides energy solutions for sustainable buildings through the use of renewable technologies, such as solar photovoltaic and solar thermal.

In 2009, CO<sub>2</sub> emissions were reduced by 898 metric tons as a result of sustainable building activities.

The eco-efficient homes delivered to date by ACCIONA Real Estate (328 in 2009) have avoided the emission of 435 metric tons of CO<sub>2</sub> per year and decreased water consumption by 48,892 m<sup>3</sup>.

**ACCIONA Real Estate  
buildings include  
technical savings  
measures and solutions**

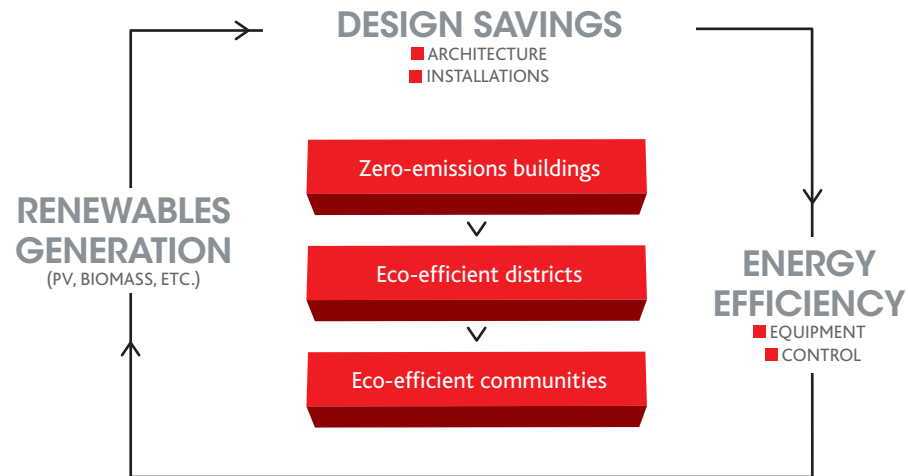


### ECO-EFFICIENT SOLUTIONS AT ACCIONA INSTALLATION SERVICES

ACCIONA Installation Services focuses on energy efficiency through the design, development, engineering and installation of eco-efficient solutions in new building projects.

The division's main goal is to respond to one of the biggest challenges facing construction today by applying eco-efficiency criteria in residential and tertiary buildings. Its primary activities include the development of power generation installations such as solar thermal and photovoltaic; generation, cogeneration and trigeneration with biomass; and installations which use geothermal energy.

ACCIONA Installation Services' three priority areas of action are: savings in the design phase, energy efficiency and renewable generation.



With the technologies at its disposal, ACCIONA can design and build homes and entire neighbourhoods whose net CO<sub>2</sub> emissions balance is zero.

## ¿What is a zero-emissions building?

It is a building which is neutral in terms of CO<sub>2</sub> emissions on the basis of the annual balance of fuel and primary energy consumption. This can be attained in two ways: by using only energy generated from renewable sources that do not emit CO<sub>2</sub>, or by producing energy from renewable sources to offset, in the course of the year, the primary energy consumed from other non-renewable sources. A building's consumption is calculated by counting all the equipment inside: both domestic appliances in homes and computer hardware in offices.

## Obtaining LEED platinum certification

ACCIONA has been selected to participate in the design and improvement of heat demand and production systems in the headquarters and laboratories of a leading pharmaceutical group in Barcelona.

The building, which is seeking LEED (Leadership in Energy & Environmental Design) platinum certification, comprises two 15-storey towers. A primary model is created, which is then compared with the model proposed by the architects.

To make the general calculations, the buildings were divided into heating zones by grouping areas with similar climate control characteristics. Parameters for the building envelope are selected according to the climate. Each zone will correspond

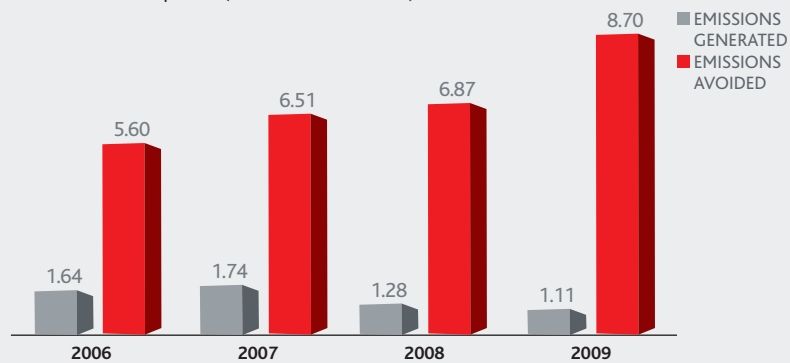
to an activity with a ratio for ventilation, standard temperatures and lighting. The goal is to simulate heat demand so as to optimize building parameters.

The two towers will be connected by an open-plan glazed atrium. The atrium has been simulated using computational fluid dynamics (CFD) to analyse temperature, air speed and humidity, so as to ensure it is comfortable year round, using the return flows from the two towers' climate control system. As a result, the atrium will not contribute to total heat demand and will provide significant energy savings. The latest-generation cooling and heating systems will be incorporated so as to achieve maximum efficiency.

## ACCIONA's climate footprint

ACCIONA's climate footprint improved for the third year in a row. In 2009, the Company avoided the emission of 7.58 million metric tons of CO<sub>2</sub> net, i.e. 35.5% more than in 2008 and 91% more than in 2006. ACCIONA's products and services produced 1.11 million metric tons of emissions in 2009 and avoided 8.70 million.

Climate footprint (million metric tons, CO<sub>2</sub>)



For the third consecutive year, ACCIONA's climate footprint continued to decline



## New situations, new businesses, new management models

Water is a limited resource and its availability may be significantly affected by climate change, which could reduce the amount and regularity of water available.

ACCIONA's projects include initiatives to reduce its own water consumption, as well as sustainable commercial solutions to address potential changes.

### DESALINATION MAY BE A SOLUTION

In 2009, ACCIONA's desalination plants treated 112 hm<sup>3</sup> of seawater for human consumption, with a notable increase in international activities in this area.

The high energy consumption of desalination plants makes the search for more efficient solutions a tough challenge. To that end, ACCIONA is focusing a strategic line of research on optimization and efficiency improvements

in desalination and on the application of renewable technologies to reduce desalination plant energy consumption.

With regard to the latter, all of ACCIONA's desalination plants use reverse osmosis (RO) technology and are designed to minimize energy consumption while also maximizing energy recovery through advanced Yield Recovery Systems (which recover hydraulic energy to offset consumption). Some desalination plants produce their own energy using solar panels.

## ACCIONA expands desalination plant in Gran Canaria and reduces its energy consumption

This project made environmental and energy improvements without increasing the surface area of the existing plant or raising operating costs.

The expansion included the construction of three new intakes to expand seawater capture by 50%, thereby providing the flow rate necessary to produce an additional 5,000 m<sup>3</sup>/day. The project also included the installation of a new sand filter and a header in the new capture wells, and extension of the frames where reverse osmosis takes place.


The work was performed without having to expand the civil engineering installation which, together with energy savings of 21%, enabled the project to be financed without increasing operating costs.

The plant, which became operational in 1995, currently supplies the municipalities of Arucas, Firgas, Moya, and the lower Teror valley. In the future, the plant may also supply the northern part of the city of Las Palmas. In addition to improving supply capacity, the expansion

will help meet the growing demand for quality water for banana farming in Arucas and the lower Moya valley.

In a worst-case scenario, when the membranes reach the end of their useful life, specific energy consumption in RO is expected to amount to 2.6 kWh/m<sup>3</sup> and average consumption by the entire plant to be 3.84 kWh/m<sup>3</sup> of treated water, i.e. a 21% reduction in energy consumption.

In **2009**,  
ACCIONA cleaned up  
87 hm<sup>3</sup> of wastewater  
in its treatment plants  
for agricultural &  
municipal reuse



#### NEW TECHNOLOGY IN WASTE WATER REUSE

In 2009, ACCIONA Agua's plants treated 87 hm<sup>3</sup> of waste water, including tertiary treatment for reuse for agricultural and municipal purposes.

ACCIONA Agua's R&D and Innovation centre in Barcelona continues to search for new technologies that offer novel solutions to the water problem. These include the latest developments with cheaper, more productive ultrafiltration and microfiltration membranes, which offer several advantages over conventional processes, such as reliability, compactness and, above all, better finished water quality.

## Carbon markets, an opportunity to tackle climate change

Although greenhouse gases (GHG) are emitted in a specific location, they affect the overall atmosphere. Therefore, climate change requires global solutions which stabilize the concentration of GHG.

Clean Development Mechanisms (CDMs) are one example of the policies and instruments created to fight climate change. CDMs are flexibility mechanisms established under the Kyoto Protocol which seek to help countries with emission reduction requirements to meet their goals, while at the same time facilitating the transfer of clean technology to developing

countries which would otherwise not have access to them.

For a project to be registered as a CDM, it must contribute demonstrably to sustainable development and environmental and social progress. The local country's legislation must be complied with strictly, and there must be a public information process.

In addition to carbon markets, and in response to the needs of companies and organizations without reduction requirements, another option is voluntary

carbon markets. The voluntary carbon offset market is increasing global awareness considerably as regards the need to fight climate change. There are various voluntary standards that certify the reduction of greenhouse gas emissions by registered projects; the Voluntary Carbon Standard is one of the most well-known.

Electricity generation via renewable sources is vitally important in mitigating climate change. To that end, ACCIONA actively participates in drafting schemes that recognise efforts to generate emission reduction credits. Of special note is:

- Registration of wind projects in Mexico, India and Korea under the Clean Development Mechanism (CDM) framework. Those projects currently generate Certified Emissions Reductions (CERs), and the first certificates have been issued in India.
- Selection of CERs from ACCIONA's wind farm in Karnataka (India) to offset emissions generated by Carbon Expo, the largest trade fair on climate change. The 148 metric tons of CO<sub>2</sub> needed are registered under the APX Voluntary Carbon Standard.
- Registration of the first US wind farm under the Voluntary Carbon Standard (VCS) programme.
- Possibility of selling CERs generated by ACCIONA's wind projects in Alberta (Canada) within the province's scheme.

## ACCIONA registers the first US wind farm under the Voluntary Carbon Standard (VCS) programme.

ACCIONA was the first company to validate and register a wind farm in the US to Voluntary Carbon Standard (VCS) requirements, which allow for the sale of carbon credits to entities and people that wish to offset their emissions. This will enable ACCIONA to supplement the wind farm's energy sales revenues.

The wind farm in Red Hills, with 123 MW of capacity and equipped with ACCIONA Windpower turbines, is the first wind project developed and installed entirely by ACCIONA in Oklahoma; it will avoid the emission of approximately 249,000 metric tons of CO<sub>2</sub> per year.

The farm has been certified by a third party and registered with the APX's VCS, which provides carbon market participants with a system to verify, monitor and sell carbon credits worldwide.

## Other emissions

Directive 96/61/EC on Integrated Pollution Prevention and Control (IPPC) and Act 16/2002 which transposes that Directive into Spanish law with a view to avoiding, reducing and controlling pollution, states that certain industrial facilities must disclose their emissions to the Spanish Pollutant Emission Register (PRTR).

Some of ACCIONA Energy's cogeneration plants and a biomass plant are among the facilities affected by the IPPC. The nitrous oxide (NO<sub>x</sub>) and sulphur oxide (SO<sub>x</sub>) emissions of those plants are:

EMISSION OF NO <sub>x</sub> AND SO <sub>x</sub>								
	SANGÜESA BIOMASS PLANT (KG/YEAR)		ÁLABE-MENGÍBAR, A.I.E. COGENERATION PLANT (JAÉN) (KG/YEAR)		COMPAÑÍA ENERGÉTICA TALOSA (SORIA) COGENERATION PLANT (KG/YEAR)		COMPAÑÍA ENERGÉTICA PARA EL TABLERO COGENERATION PLANT (COMETA S.A.) (CUENCA) (KG/YEAR)	
	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>	NO <sub>x</sub>	SO <sub>x</sub>
2009	117,264	7,043	440,221	7,780	270,014	7,825	257,299	4,713
2008	219,761	15,203	310,929	7,750	264,385	7,500	311,042	10,750

ACCIONA Trasmediterranea monitors on a regular basis the SO<sub>x</sub>/NO<sub>x</sub> emissions of its entire fleet.