

# **INFRA- STRUCTURE**

## **MINING & RESOURCES**

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## ACCIONA, profitability, development and sustainability

ACCIONA is one of the major Spanish companies and a global leader in the promotion, development and management of renewable energies, infrastructures, water and services. We have operated for one century through more than 30 thousand professionals, and we are present in more than 30 countries across the five continents. In 2014, our sales reached 6,499 million euros.

At ACCIONA we focus our strategy on economic growth, environmental protection and social development as the cornerstones of our Sustainability policy. We also focus on aligning and relating sustainability principles to our business strategies, given the significant opportunities offered by sustainable development in the fields where we operate. For this kind of initiatives, we develop our strategy following a Sustainability Master Plan that integrates projects related to sustainability throughout the Company, with the purpose of improving our competitive advantage and supporting our status as leaders in sustainable practices.

At ACCIONA we firmly believe that innovation drives development; therefore, it is the key to our growth. Likewise, we are committed to gradually reducing our carbon footprint and leading the transition to a low-carbon economy. Thanks to these initiatives, ACCIONA's activities and operations prevented in 2014 the emission of more than 16 million tons of CO<sub>2</sub> into the atmosphere.

This enabled us to be included in popular sustainability indexes, such as Dow Jones Sustainability (DJSI World), FTSE4Good, MSCI Global Climate Index, CDP Climate Performance Leadership Index 2014, CDP Iberia 125 Climate Disclosure Leadership Index 2014 and CDP Supplier Climate Performance Leadership Index.



# ACCIONA

ACCIONA is among the major Spanish companies operating in infrastructures, renewable energies, water and services in more than 30 countries.

Its motto, "Pioneering in development and sustainability", reflects its commitment to contributing to economic growth, social development and environmental protection in all its operations. This commitment has been acknowledged through its inclusion in several sustainability indexes: Dow Jones Sustainability (DJSI World), FTSE4Good,

MSCI Global Climate Index, CDP Climate Performance Leadership Index 2014, CDP Iberia 125 Climate Disclosure Leadership Index 2014 and CDP Supplier Climate Performance Leadership Index.

ACCIONA employs more than 30,000 professionals distributed in five continents. Its sales reached 6,499 million euros in 2014.

ACCIONA is highly experienced in infrastructures development, design, construction, management and refurbishing.



The world's longest structure without intermediate supports (96,000 m<sup>2</sup>; 592 x 160 m), using a prestressed steel structure that can store up to 40,000 tons of lignite



As Pontes Coal Thermal Power Plant



# Quality, Safety and Environment

ACCIONA Infrastructure' Health & safety policy is applied throughout the company to minimize accidents and diseases, and to promote constant improvement in working conditions, as well as the highest quality in H&S management.

ACCIONA Infrastructure' commitment to excellence, quality and environmental protection is the guiding principle of all its activities, and it is aligned with its mission of contributing to social wellbeing and sustainable development.

ACCIONA Infrastructure promotes mutually beneficial relations with the community,

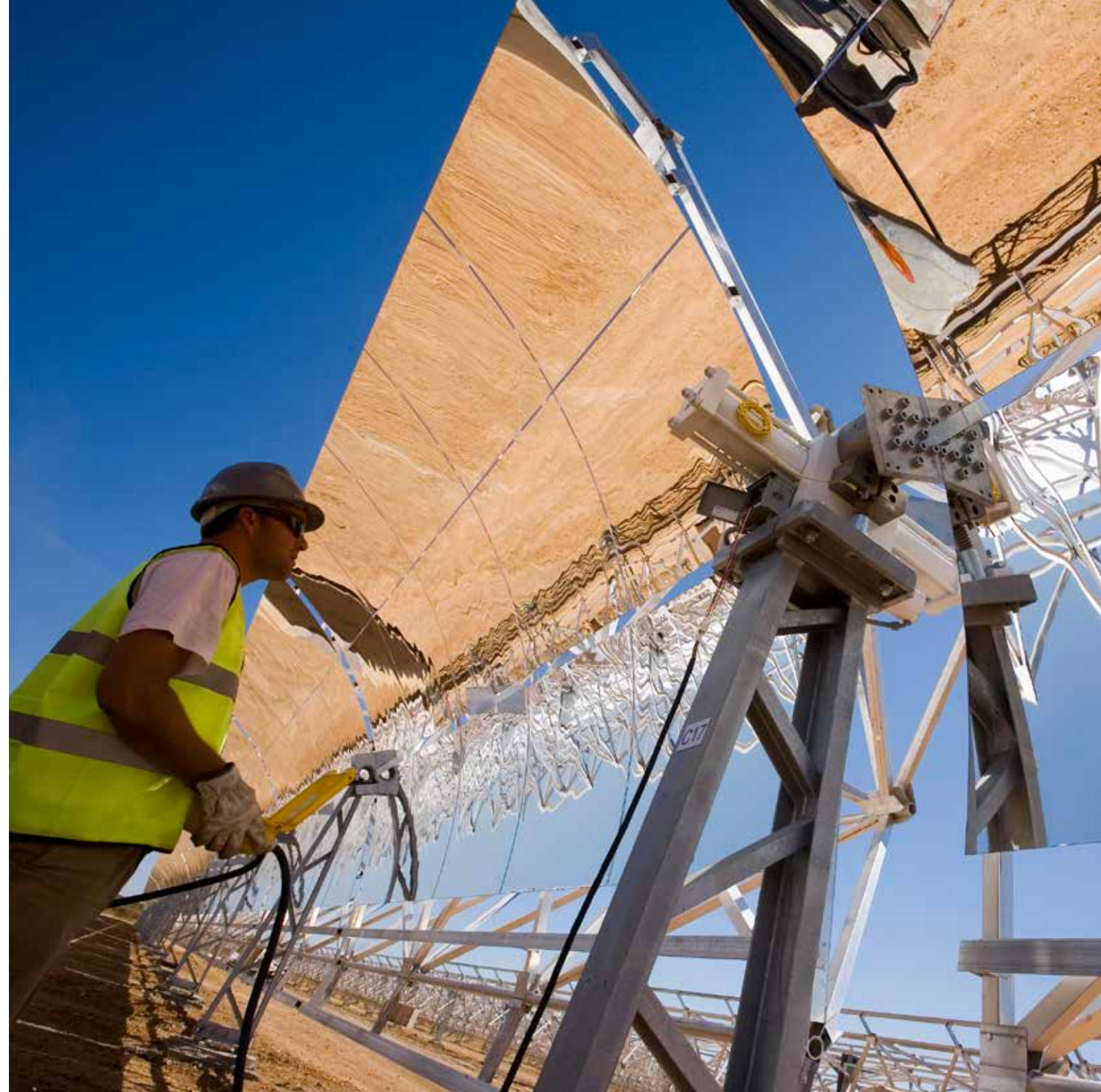
and offers innovation, technology and education while respecting the social balance and the environment.

ACCIONA chooses projects with the potential to become long-term programs that contribute to the development of the local community and are beneficial for the larger part of the population. Safety comes first during the development and delivery of these projects.

ACCIONA Infrastructure' strategy is based in designing safe methods right from the start, so as to guarantee safe conditions in the design, supply, construction and delivery of each project. ACCIONA strives to keep

its employees, contractors and clients safe at all times, as well as all the individuals whose lives or work activities are in any way impacted by ACCIONA's activities.

ACCIONA Infrastructure' Health & Safety culture has been tested at a local and international level by the implementation and certification of a Safety System, in line with applicable regulations and client requirements.



# Local content

ACCIONA makes a commitment to local communities right from the start of its operations. It contributes development and learning to nearby communities and encourages their participation in its projects.

ACCIONA's philosophy involves the application of its own model of Social Impact Management, analyzing all the phases of a project by developing it according to local needs and giving great emphasis to Local Content. This system is applied during the preliminary phase and the preparation of the bid, and the continues during the award phase of the project and finally its construction and operation.

The company's intention is to create a basis for the development of the region once its operations there have ended, strengthening the benefits of the project and offsetting any negative impacts.

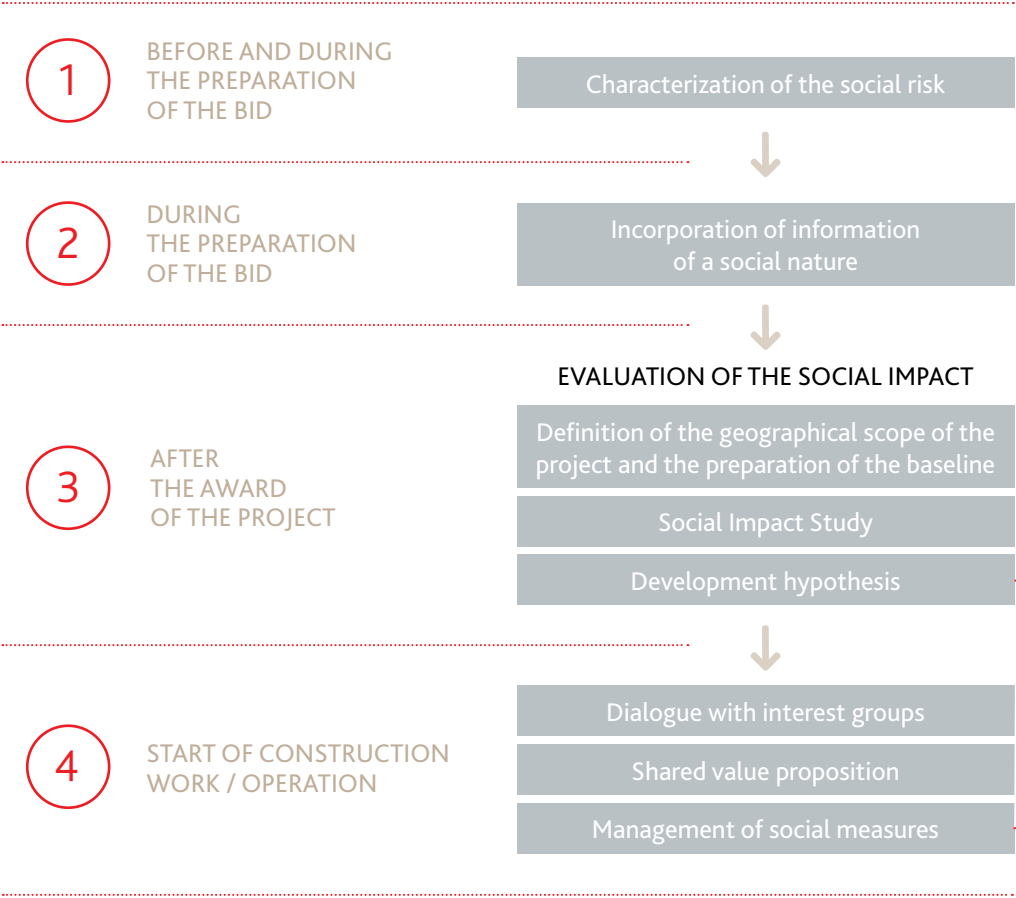
The aspects that ACCIONA studies and analyzes prior to starting an operation include a study of the demographical, social and economic characteristics of the places affected, the presence of basic infrastructure and access routes and the political and environmental context. For this purpose, the company considers local authorities, residents', education and religious organizations, direct

and indirect employees and individuals/groups that participate in a direct or indirect way in the project as interest groups.

ACCIONA makes a social proposition with local content that covers the following:

- The hiring of locally-based employees
- The training of local manpower
- Knowledge and technology transfer
- Supplies from local resources and services.

# MSI Management of the Social impact of Projects





# R&D+i

ACCIONA has three technology centers in different parts of Spain: the Technology Center of Pamplona, the heart of innovation in renewable energies; the Technology Center of Barcelona, where state-of-the-art solutions for water treatment, desalination, potabilization and distribution are developed; and the Technology Center of Madrid, which focuses on research into Infrastructures, Materials, Energy

Efficiency, ICTs, automation and 3D visualization (BIM).  
  
ACCIONA divides its research areas into sectors, developing patents and technologies in all fields:  
  
In the area of soil treatment, ACCIONA has developed a microbial technology for the surface treatment of soils contaminated with hydrocarbons and heavy metals.

This technique is cheaper than other alternatives on the market and offers a wide range of treatment options to reduce environmental impacts caused by pollution.  
  
In the field of new materials for the construction sector, ACCIONA proposes the use of innovative materials for structures such as ramps and footbridges made of composites.

ACCIONA has developed a remote monitoring system called SINDEO that consists of the visual control of a project that can be followed by any user who requires it, from any location. Then there is INFOSITE, a tool that facilitates the electronic management of project documents.

We apply the BIM methodology to our projects, which enables us to improve the quality of project management and also reduce costs and completion periods.

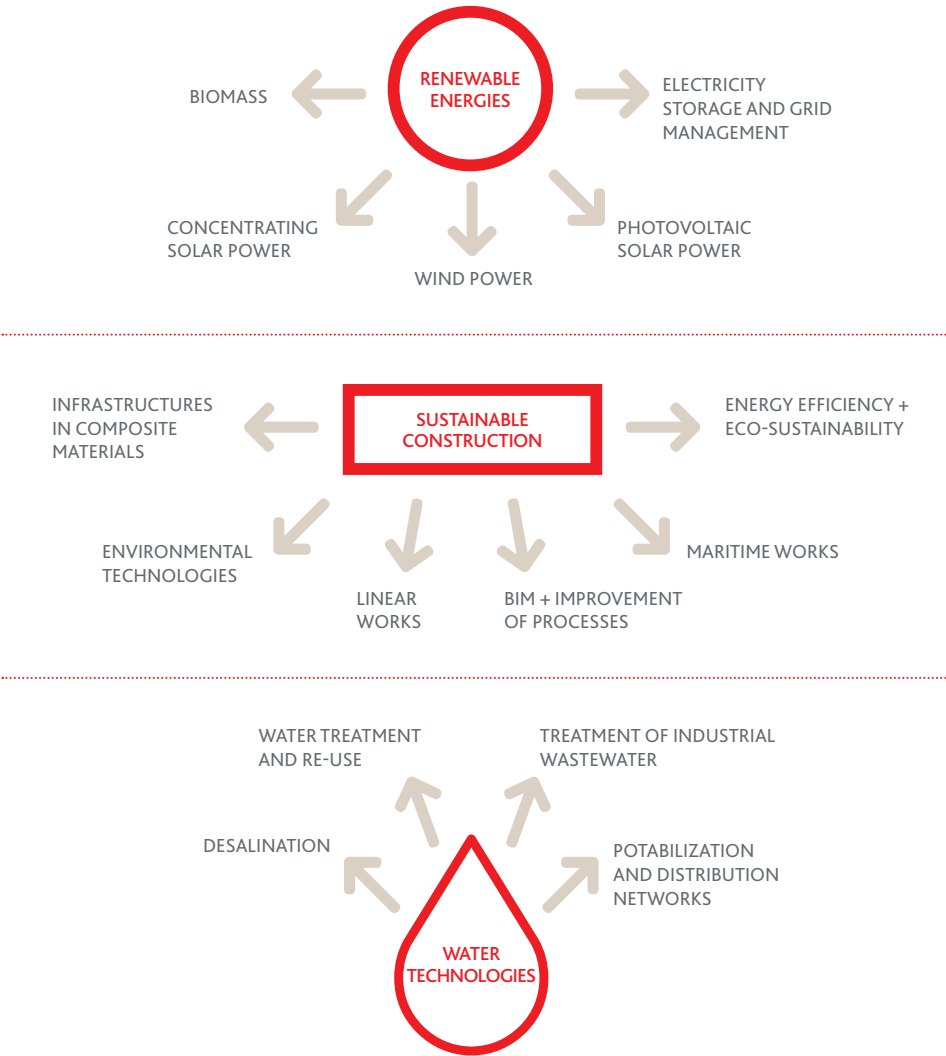
In the desalination sector, the Company holds patents such as:

- ELFA (Treatment)
- SEPAFLOC (Desalination / Pre-treatment)
- BIOFILPAS (Potable water)
- MEMPACK (Wastewater)
- OPTIMIZACIÓN ENERGÉTICA
- SPLIT CIEGOS (Desalination)
- ACTIDAFF / ULTRAFLOT (Desalination).



ACCIONA is participating in the Dakar Rally with its electric car

## Strategic lines of R&D+I in ACCIONA





# ACCIONA Infrastructure

ACCIONA Infrastructure is among the world's leading construction companies in RD&I. It offers design, infrastructure and construction solutions for the mining, transportation, electricity, water, oil and gas sectors.

ACCIONA Infrastructure more than a century of experience in the construction industry. Its philosophy centers in sustainable development and excellence, technology and innovation, and it dictates every aspect of its operations: from engineering and design to implementation and maintenance.

ACCIONA Infrastructure' global acquisition philosophy considers the

interests and needs of both the clients and the company, at a local and global level.

ACCIONA Infrastructure has all the necessary tools to implement innovative solutions to the most challenging projects, from a small to a big scale, regardless of the terrain and in any part of the world. All its operations are carried out in consideration of environmental, social and economic factors, following global sustainability criteria, and striving to improve construction and innovation processes, and to apply environmental protection measures. Within this framework, ACCIONA Infrastructure

develops construction solutions for all kinds of developments, from open-pit mining activities with contracts for large soil movements in difficult access areas, to underground projects, both cases including very remote locations and extreme weather conditions.

ACCIONA Infrastructure is a leader in underground projects and it has carried out many technically complex projects for the mining industry. This allows ACCIONA Infrastructure to offer a global and near approach in the execution of mining industry infrastructures.





# Mining Infrastructure

ACCIONA Infrastructure develops solutions and operation or expansion plans for the mining industry, as well as prospecting for new deposits. It applies the highest health and safety standards for its workforce, mining planning, geotechnical requirements and environmental protection.

ACCIONA Infrastructure boasts vast experience in the design and construction of mining infrastructures, with a long history of successful projects, such as:

- 1950s. Phosphate Mineral Loading Dock in Aaiún (MOROCCO)
- 1960s. Oil Loading Dock at Luanda Port (Angola)

- 1970s. Sierra Menera Mineral Pontoon (Spain)
- 1980s. Gibraltar Mineral Port (Spain)
- 1990s. Almaraz Nuclear Plant (Spain)
- 2000s. Heavy coal transport operation (Spain)
- 2010-Present:
  - CODELCO Underground Works in Andina and Chuquicamata (Chile)
  - Copiapó Desalination Plant (Chile)

ACCIONA Infrastructure offers global and near services for infrastructure implementation for this industry.

Coal transportation between La Robla Thermal Power Plant and Gijón Port. Spain





Madrid-Levante High-Speed Line. Spain



Road through the jungle in Kelle-Akiene and Lambarene-Fougamou. Gabon

# Transport links

Transportation infrastructures are one of ACCIONA Infrastructure' main activities. ACCIONA Infrastructure has developed hundreds of projects such as airports, highways, bridges, viaducts, tunnels, and high speed, conventional and underground railroads in more than 30 countries for different governmental administrations and private parties.

ACCIONA Infrastructure offers innovative solutions with its long history in the management of large and complex projects.

## Roads

ACCIONA Infrastructure' experience in roads ranges from complex projects for heavily populated areas, such as the A-30 Highway in Canada, to remote areas, such

as the Mamiengue-Fougamou Highway in Gabon.

ACCIONA Infrastructure has achieved the highest standards in the design and

construction of tunnels, after participating in the last 20 years in the creation of safer and more efficient methods.





High-Speed Line  
Madrid-Barcelona-French  
border Subsection XV.  
Zaragoza BY-PASS

Trains

ACCIONA Infrastructure leads the development of railroad infrastructures, from urban to high-speed lines, including freight trains. It has the capacities to design, build and later operate and maintain railroad infrastructures, meeting the needs of its clients.

ACCIONA Infrastructure currently owns and operates a line of 140 km for transportation of coal from La Robla mine to the port of Gijón.



New runway at the airport in  
Malaga, Spain

Airports

ACCIONA Infrastructure has been part of the construction of major international airports (Madrid, Roma, Barcelona) and also in the design and construction of smaller airports in remote areas, such as San Pedro Sula (Honduras) or Kingston (Jamaica).

ACCIONA also manages the operations of large airports around the world (Berlin, Frankfurt, Madrid), which gives us a thorough understanding of clients' design and construction requirements.





San Juan de Nieva  
Zinc processing plant

## Maritime and hydraulic works

From its inception, ACCIONA Infrastructure has collaborated in the development of several ports and hydraulic projects in different parts of the world.

ACCIONA Infrastructure has carried out hundreds of projects, such as all kinds of harbors, docks, terminals, jetties and breakwaters,

as well as dredging works and refurbishing of coastal areas, from the early design stages to the construction and delivery of cutting-edge systems.

ACCIONA Infrastructure has consistently offered global solutions that contribute to improve national and international transportation,

and to a more efficient use of hydraulic resources.

ACCIONA Infrastructure' maritime works team includes more than 100 highlyqualified specialists highly qualified and experienced in great challenges, such as remote locations, complex structures and tight deadlines.



### Port of Açu. Brazil

ACCIONA headed the design and construction of the external dykes in the shipyard. It is the largest mineral port in Latin America, and it handles de Panamax, Chinamax and VLCC.

# Comprehensive water cycle for the mining industry

ACCIONA Agua specializes in management of the water cycle, both in mining operations and in the oil industry, through each step of the process:

- Water supply from superficial and/or underground water, grey water, desalinization, process water treatment, etc
- Filtration and Lixivate Ponds

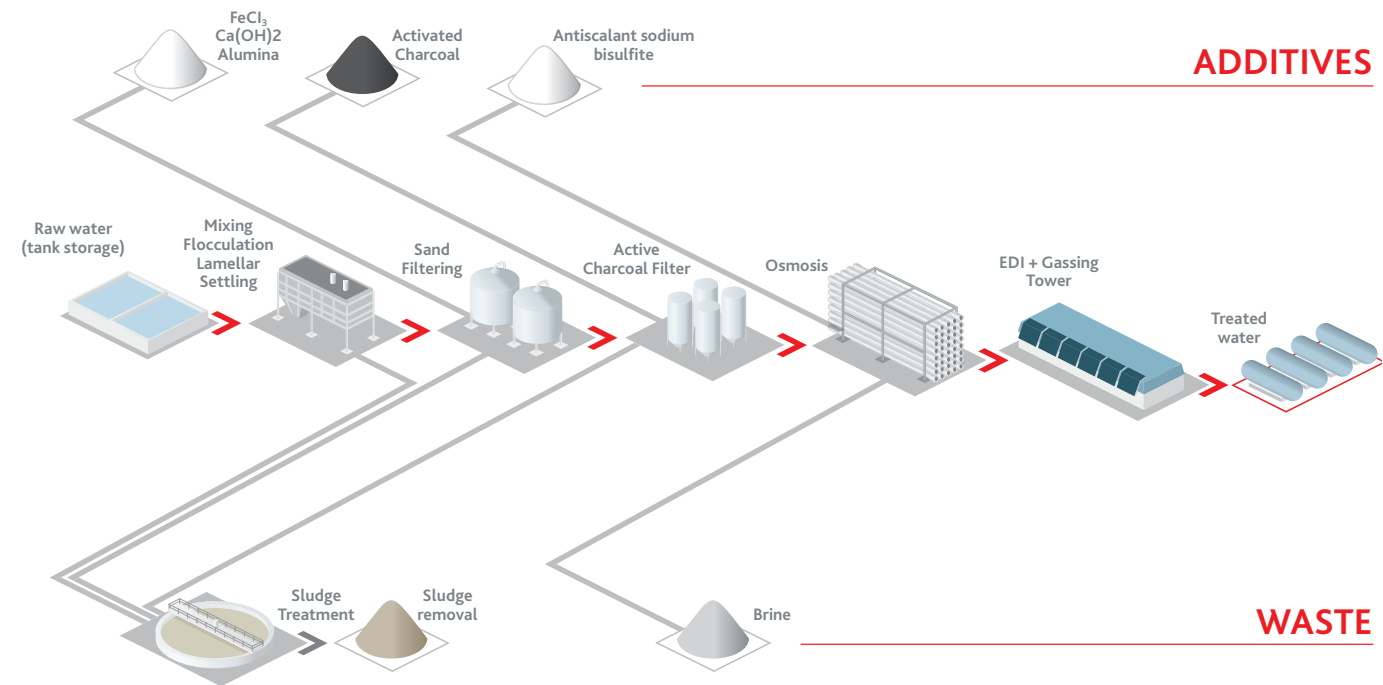
- Wastewater Treatment
- Effluent Reutilization
- Waste Recovery

ACCIONA Agua has ample experience in the provision of water supply services for the mining industry:

- Water and Effluent treatment plants design and construction
- Water and Effluent treatment plants operation and maintenance

- Environmental water management and reutilization
- Integral management of the water cycle

## Mining facility, Chile





# Power generation and supply

ACCIONA Infrastructure carries out power generation projects ranging from diesel-based thermal and combined cycle power plants to solar thermal and photovoltaic power plants.

ACCIONA Infrastructure offer small- and medium-sized plants for industries with moderate energy needs and large combined cycle plants.

We have also participated in the design and construction of nuclear plants in Spain and Brazil, in compliance with strict safety and quality standards.

ACCIONA is also one of the major world operators of renewable energies.

## Eurus Juchitán wind farm, in Zaragoza. Oaxaca. Mexico

- Implemented Power: 250.5 MW
- Investment: 550 million USD
- 167 wind turbines
- Largest wind farm in Latin America
- Prevents release of 600,000 tons of CO<sub>2</sub>



## Power plant Sidi-Krir Alexandria

- Public works for the construction of:
- Power generating stations 2 x 320 MW
  - Desalinization and water treatment plants
  - Water pumping and distribution system
  - Buildings: auxiliary power station, electronic equipment and more
  - Power transformers
  - Fuel storage tanks





Coal treatment plant in Bogdanka, Poland



# Industrial Plants

ACCIONA Infrastructure has managed projects and developed solutions for clients in more than 30 countries.

- Industrial Plants
- Coal treatment facilities
- Mineral storage plants
- Hangars
- Factories
- Solid waste treatment plants
- Liquefied natural gas plants
- Grain silos
- Other

## Adriatic Terminal LNG (Algeciras, Spain- Venice, Italy)

This is the world's first offshore terminal, with a 250,000 m³ capacity and the potential to expand to 8 million tons a year. ACCIONA Infrastructure

received the Aker Solution Health & Safety Award, for making safety, environmental protection and quality the top priorities in this project.



# Mining facilities

ACCIONA Infrastructure has ample experience in EPC projects around the world, including mining facilities, soil movements, material treatment, structural components and public works.

ACCIONA applies innovative solutions to:

- Operations in remote areas
- Complex treatments for minerals and other materials
- Meeting deadlines and budgets
- Multidisciplinary engineering integration



## Copiapó Desalinization Plant 54,400 m³/day (Atacama Desert, Chile)

The desalinization plant was built and operated, including 80 km of water

pipes and 80 km of mineral ducts.



## Mineral storage facility, San Juan de Nieva (Asturias, Spain)

This is the largest mineral storage facility in Europe, extending to almost

20,000 m², housing up to 180,000 tons of minerals.



Ventilation tunnels  
construction (4.3 km)  
for underground  
Chuquicamata mine

# Mining Development Projects

ACCIONA Infrastructure offers services for the whole life cycle of the mine: from its construction and operation to its closure and reconditioning.

ACCIONA Infrastructure' mining projects range from open-pit mines, with large

soil movement contracts and complex terrain, to underground mines.

ACCIONA Infrastructure is the leader in underground projects and it has carried out many technically complex projects for the mining industry.

## ACCIONA experience in tunnel construction (2003-2015)

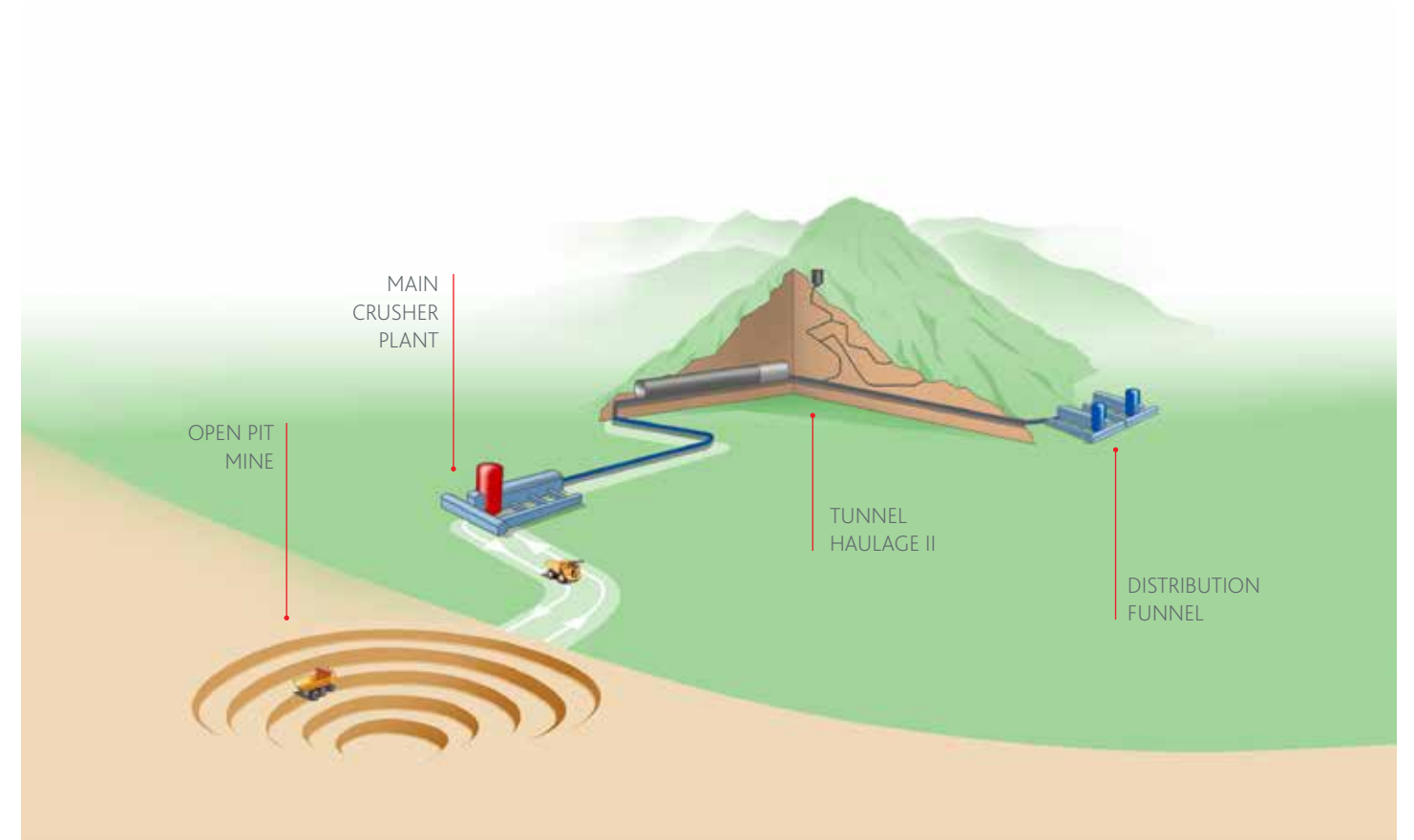
TUNNELS TYPE	TUNNEL DIAMETER (m)	TOTAL LENGHT (m)
TBM	3,5 ≤ Ø ≤ 15.2	223,945.7
Drill & Blast	5,4 ≤ Ø ≤ 12.4	60,772.4
Mechanical	8,4 ≤ Ø ≤ 14	17,274.8
Cut and Cover	8,8 ≤ Ø ≤ 15.2	20,981.5





## Las Cruces copper mine Seville, Spain

Processing plant construction.



## Andina, Chile

Construction of a mine-plant  
transportation system.





# Facilities Services and Maintenance

ACCIONA Facility Service offers the mining industry its great skills in maintenance

and cleaning of industrial facilities, logistics, and office and camp management.

## Gijón and Avilés Arcelormittal factories

Since 2012 ACCIONA Service carries out different maintenance activities in the Asturias factories (2,000,000 m<sup>2</sup> area), with its own staff of 160 employees.





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