




ABENGOA

Energy

Decarbonization Solutions &
Microgrids



Who
1 are we?

Who are we?



Abengoa is an international company that applies innovative technology solutions for **sustainable development** in the infrastructure, energy and water sectors.

Constructing energy infrastructures

- Generating conventional and renewable energy.
- Transporting and distributing energy.

Providing solutions for the integrated water cycle

- Developing desalination and water treatment processes.
- Constructing hydraulic infrastructures.

Being a reference in the transmission and distribution sector

- Developing transmission lines, electric distribution and railway electrification projects.
- Constructing installations and infrastructures for all types of plants and buildings.

Obtaining results in the services area

- Providing operation and maintenance services for plants optimization.
- Managing private assets efficiently.

Furthering new horizons for development and innovation

- Our 280 accumulated awarded patents since 2008 position us as technological leaders in sectors such as solar thermal technology.
- Renewable energy storage and our bet for energy efficiency and water consumption (water-energy nexus).

A Viable **Company with Solid Fundamentals**



Solid business of engineering, procurement, construction and operation and maintenance in high growth markets



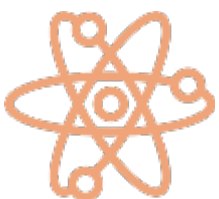
Global footprint makes Abengoa's business more resilient and the size of its backlog and pipeline provides revenue visibility



Credibility regained with stakeholders



Leaner organizational structure and high operational efficiency



The development of commercially viable cutting-edge technology has become Abengoa's key competitive advantage



A more focused business model and a healthier, sound capital structure, together with a multidisciplinary set of capabilities places Abengoa in a solid position for future value creation



Formed by a team of committed and skilled people that have specialized and competitive know-how

Main Magnitudes



Global presence with a recognized position of leadership in main world rankings (GWI, ENR).



+ 27,000 km of transmission and distribution lines and more than 330 substations worldwide over the last 15 years.



9.3 GW of installed power in conventional generation plants, of which 1.4 GW are under construction.

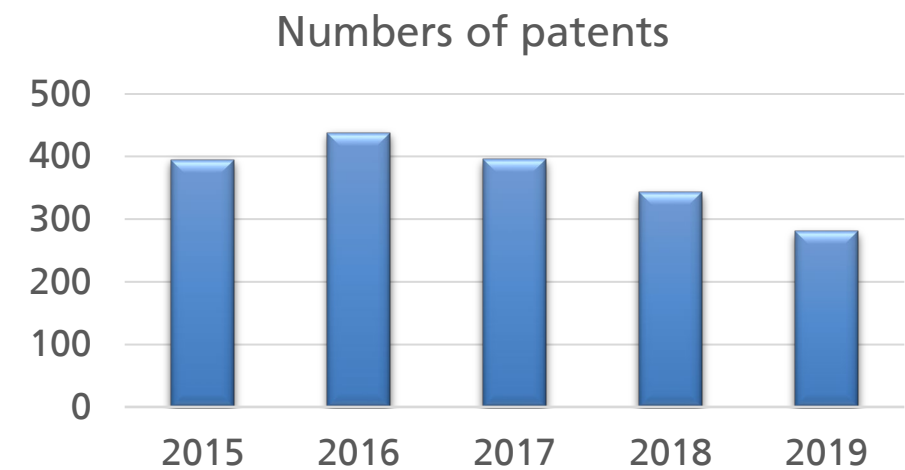


+ 1.8 million of m³/day of desalinated installed capacity and 2.5 million m³/day under construction.



2.3 GW* solar power constructed, + 1,000 MW under construction, and 480 MW of wind power.

* 30% of the worldwide installed solar thermal energy capacity already under operation.

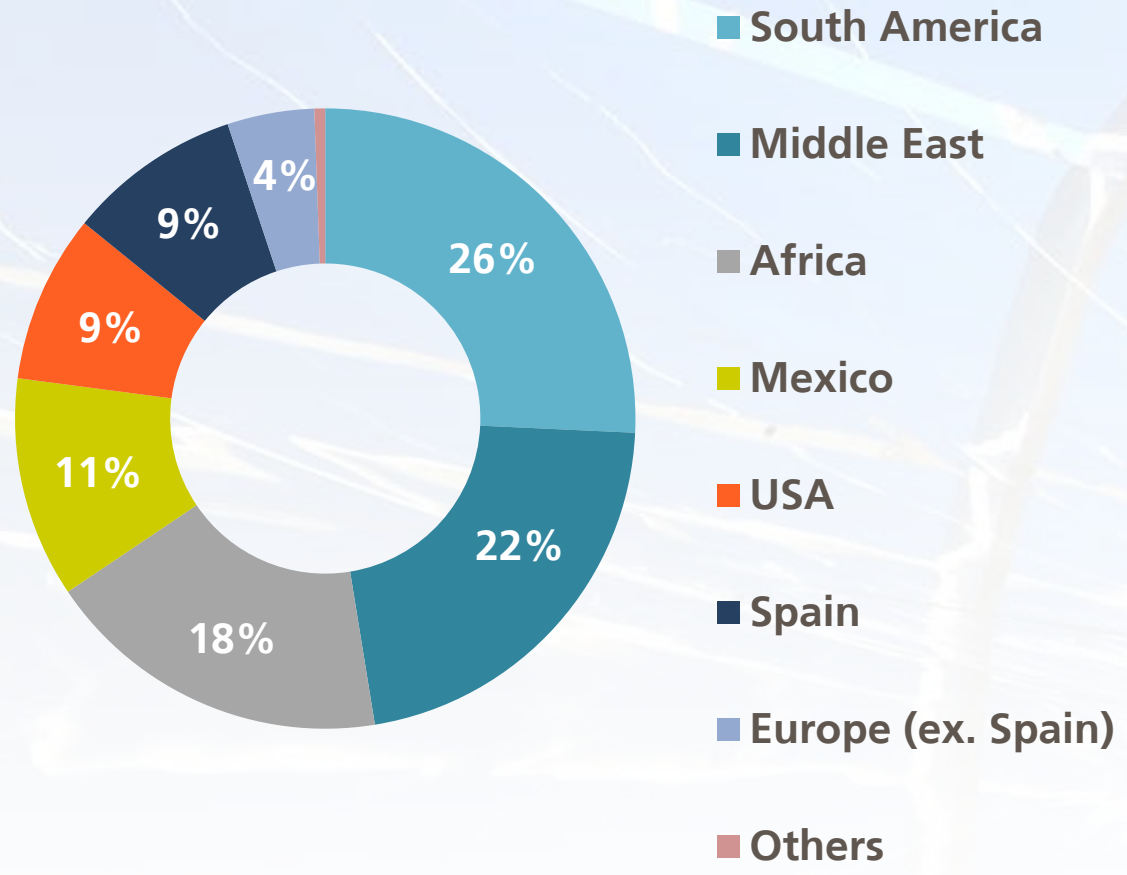


280 patents at the end of 2019.

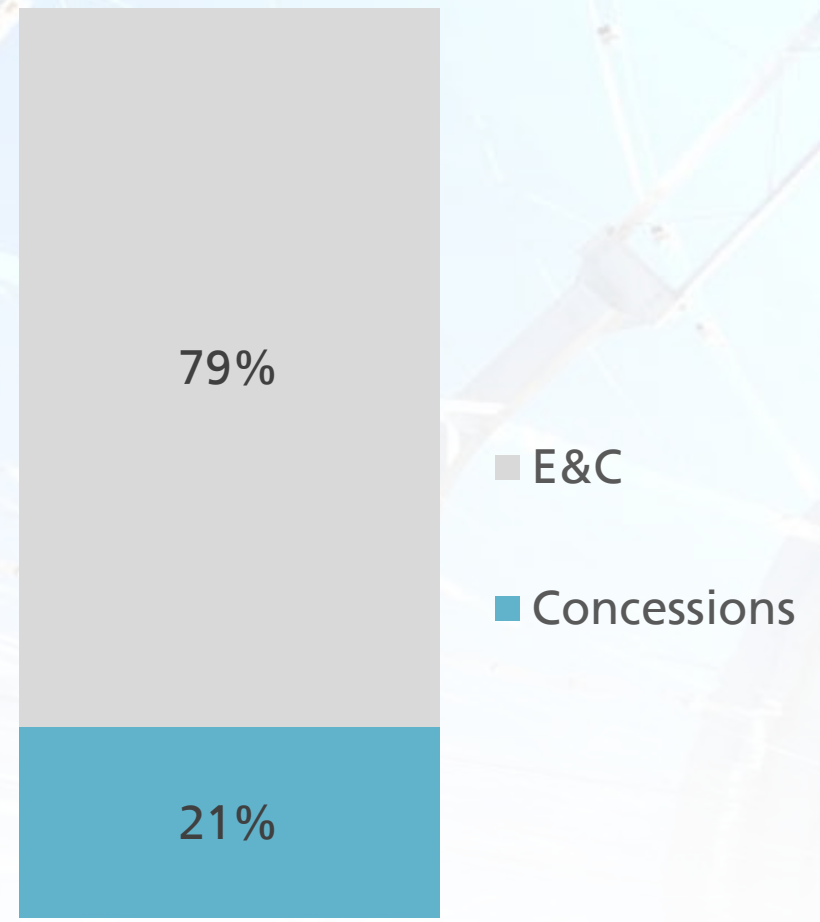
Main indicators

Results as of close of 2019

Revenues by geographies



Revenues by segment



Abengoa Figures	2019
Sales	1,493 M€
EBITDA	300 M€
Employees	14,025

Main projects under execution

- ⚡ Waad Al Shamal (Saudi Arabia)
- ☀️ Noor Energy 1 (UAE)
- 💧 Agadir (Morocco)
- ☀️ O&M solar plants (Spain)
- 💧 Taweelah (UAE)
- ⚡ Chuquicamata Humos Negros (Chile)
- 💧 Rabigh (Saudi Arabia)
- ⚡ Fulcrum (USA)

New Projects 2019

Abengoa has been awarded in 2019 new projects for a total value of €1,107 million, including world's largest reverse osmosis desalination plant in Taweelah. Among them:

	Taweelah	UAE	<ul style="list-style-type: none"> Construction of the world's largest reverse osmosis desalination plant with total capacity of 909,000 m³/day.
	Dubal	UAE	<ul style="list-style-type: none"> Construction of a seawater reverse osmosis desalination plant with total capacity of 41,000 m³/day..
	RWEL Klaipeda-Vilnius	Lithuania	<ul style="list-style-type: none"> Electrification of more than 730 km of railway lines.
	Switching Substation Río Malleco	Chile	<ul style="list-style-type: none"> Construction of a 220 kV substation in Chile.
	Seville Airport	Spain	<ul style="list-style-type: none"> Civil works and installations in the expansion of the San Pablo Airport in Seville.
	Southern Peru Copper Corporation	Peru	<ul style="list-style-type: none"> Construction of a retention dam to hold 40,000 m³ at 3,500 meters above sea-level, and several singular buildings within the copper mining facilities.



Lines of activity

Abengoa organizes its activity in several business areas: Energy, Water, Transmission and Infrastructure and Services, all of which are based on R&D and Innovation.



Energy

- Conventional and renewable energy generation.
- Proprietary solar technology and leader in worldwide installed capacity.
- 9.3 GW of installed capacity in conventional generation.
- Experts in hybridization of generation technologies to provide clean and dispatchable energy solutions.

Water

- Specialist in infrastructure for the integral water cycle.
- Excellence in technical capabilities.
- Leader in the international desalination market and a worldwide reference in the construction of hydraulic infrastructures and treatment plants.
- 1.8 million m³/day desalinated water capacity and 2.2 million m³/day of drinking water.

Transmission & Infrastructure

- Leader in the international transmission and distribution and infrastructure market for the energy, industry, transport, environment, communications and rail sectors.
- More than 27,000 km of transmission lines and 330 substations.
- 4,500 electrified km and more than 80 traction substations.

Services

- Service providers for infrastructure in the transmission, water, and renewable and conventional power generation sectors.
- Optimization of O&M, improving management and increasing production.
- 25 years of contracts average life.

Energy

Abengoa has extensive experience in **engineering, construction, assembly and commissioning** of power generation with open cycle technologies, combined cycles, cogeneration, wind farms, solar thermal, photovoltaic, energy recovery and biomass plants that together exceed **13,000 MW installed and under construction** capacity.

Abengoa has its own **solar thermal technology** and is a world leader in this sector, where it has developed, designed, built and/or operated solar thermal plants in four continents, with a total capacity of 1.9 GW, representing approximately 30% of capacity worldwide. In addition, the company is currently participating in 52% of solar thermal capacity under construction.

Abengoa is carrying out turnkey (and EPCM) projects in all these areas that encompass the entire **value-chain**: development, engineering, purchasing, construction, plant commissioning, in addition to offering operation and maintenance.

Noor Energy I

United Arab Emirates



3x200 MW parabolic trough collector plant + 12 hours of storage

Hassi R'Mel

Algeria



150 MW integrated solar combined cycle hybrid plant

ACT + A3T

Mexico



300 and 220 MW efficient cogeneration plants

Cerro Dominador

Chile



110 MW solar thermal plant +100 MW photovoltaic plant +17,5 hours of storage

Fulcrum

USA



Plant to produce biofuels for the aviation sector from municipal solid waste

Water



Abengoa specializes in the design and construction of **desalination plants**, with more than 30 plants in Spain, Africa, Latin America, USA, Asia and Middle East. These **produce drinking and industrial water** through conventional and advanced membrane processes from seawater or brackish water. Currently it has over **1.8 million m³/day** desalinated water installed capacity and **2.5 million m³/day under construction**.

The company has extensive experience in water treatment with more than 120 projects executed, both in **drinking water** as well as in urban and **industrial wastewater treatment and re-use**, including the sludge digestion and recovery.

Abengoa has always been at the forefront of **hydraulic initiatives**, with public and private institutions in the implementation, **improvement and exploitation of regulation infrastructures, transport** (+40 pumping stations and +1,100 km of large conductions), **distribution** (+4 M of people served), irrigation (+500,000 ha) and **hydroelectric plants** (400 MW installed in more than 40 projects of plants construction, improvement and modernization).

Desalination



Taweelah desalination plant
United Arab Emirates



Agadir desalination plant
Morocco

Water Treatment



Cunene supply and sanitation system
Angola



Sewage treatment plant Ranilla
Spain

Hydraulic infrastructure



Tierra Amarilla Aqueduct
Chile



Canal de Navarra Irrigation
Spain

Transmission & Infrastructures

Abengoa has built more than 27,000 km of **transmission lines** all over the world and more than 330 substations in the last 15 years. Currently, interconnection projects are being executed of up to 800 kV for both AC and DC.

In the **railway** sector, more than 4,500 km of railway lines have been electrified and over 80 traction substations have been constructed.

In addition, the company has a facility and **infrastructure division**, that specializes in all kinds of installations, plants and other singular buildings (hospital, correctional and administrative facilities, etc.).

It also has a **production center for electrical panels and electronics** and one for the **manufacture of metal structures**.



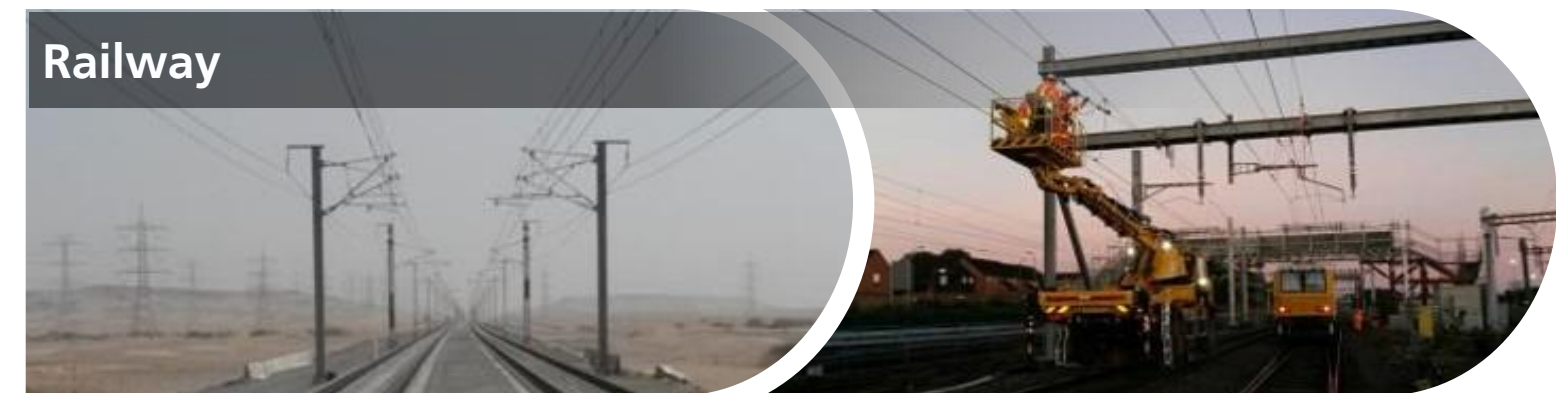
Transmission and distribution

Transmission lines

France

Substations

Oman



Railway

Meca-Medina highspeed line

Saudi Arabia

Railway electrification

United Kingdom



Installations & Infrastructures

Installations in industries

Spain

Electromechanical installations

Spain



Production centers

Electrical panels & Electronics

Spain

CP metallic structures

Spain

O&M Services

The vast experience (more than 18 years) and involvement in the **development, industrialization, operation and maintenance** stages, where we are global leaders in **solar thermal O&M**, allows Abengoa to have a large backlog and pipeline of products and services for different technologies. These optimize **energy and water** plant's operation and maintenance and therefore provides our clients with a high-quality service that results in high rates of availability and improved asset productivity.

- Abengoa is a benchmark in the O&M of **solar plants** of which it has a commercial experience of 1,631 MW, of all commercial technologies (photovoltaic, solar thermal, hybrid with conventional cycles).
- It operates **desalination plants** all over the world. Currently, it supplies O&M in seven plants, located in Spain, Algeria, India and Ghana.
- Abengoa currently operates 190 MW in wind farms and more than 850 MW **in cogeneration and conventional plants**, being a pioneer in the O&M of hybrid solar-gas plants.

Ain Beni Mathar

Morocco



472 MWe Combined cycle
(solar+gas)

Solana

USA



280 MW parabolic trough
plant with six hours of
storage

Honaine

Algeria



Desalination plant
producing 200,000
m³/day of drinking water

Cerro Dominador

Chile



100 MW PV solar plant

Abent 3T

Mexico



220 MW high efficiency
cogeneration plant

R&D and Innovation

Technological development continues to be Abengoa's key **competitive advantage** in the undertaking of high added value projects. The company continues to develop R&D and Innovation projects, which improve both the performance of current products and services and the acquisition of new skills. Abengoa has **280 patents** at the end of 2019.

 **Solar Thermal**

 **Water**

 **Railway**

 **Energy Storage**

 **Aerospace**

H₂ Hydrogen Generation



Solar Thermal

Development of more efficient solar thermal plants to improve the competitiveness and dispatchability of solar technology in the energy mix. Abengoa has its own technology and a worldwide solar thermal installed capacity of 35%.



Energy Storage

Development of storage systems with the objectives of improving the quality of the electricity network and favoring the integration and dispatchability of renewable energies.



Hydrogen and Fuel Cells

Development of power generation plants, based on fuel cells, as well as hydrogen production plants and hydrogen service stations for vehicles.



Aerospace & Defense

The main activities focus on the development of electronic products for the aerospace, large facilities and defense sectors, as well as R&D which explores synergies between these sectors and energy.



2 Technologies and solutions for decarbonization

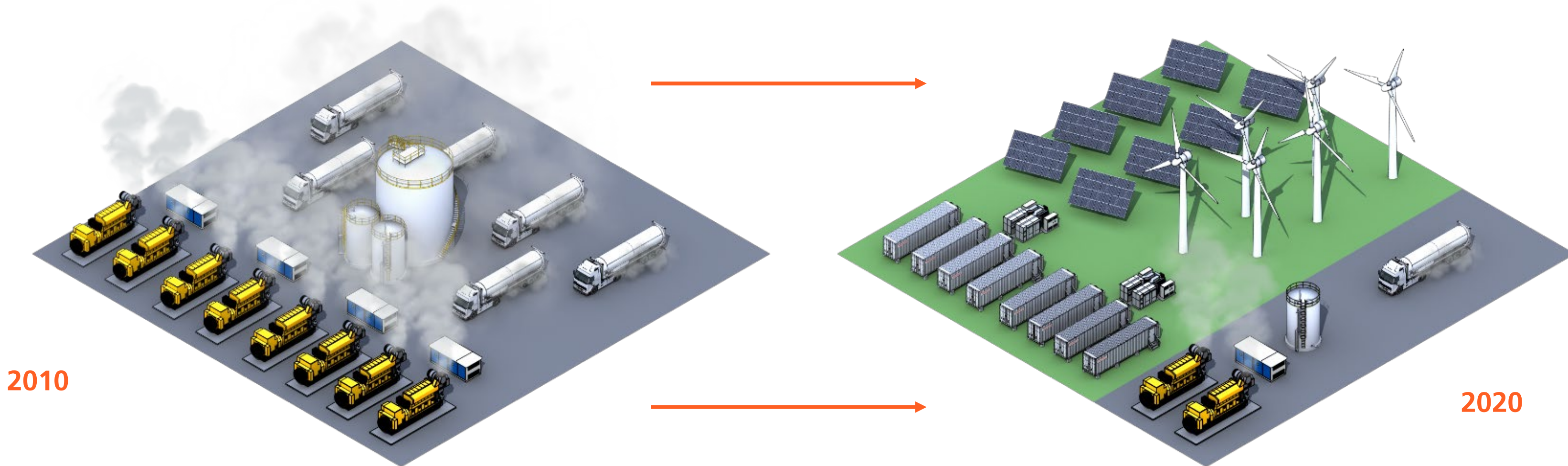
Abengoa in Energy

Isolated grids and captive power The past → The present

In the past decade, solar, wind and battery prices have dropped significantly, while efficiency, performance and reliability have greatly increased. Meanwhile, engines, diesel and fossil fuels have gotten more expensive.

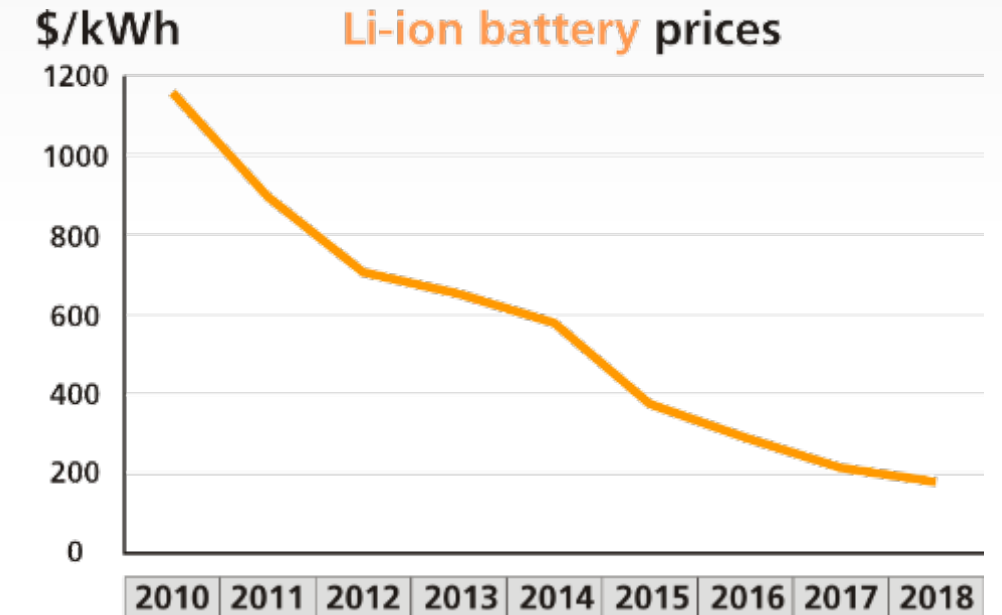
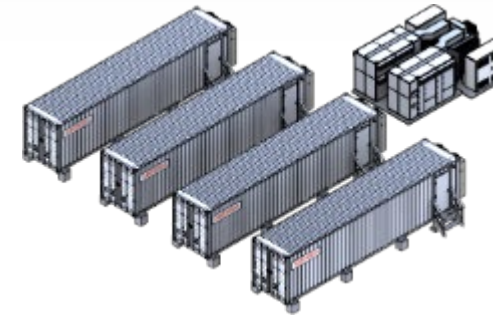
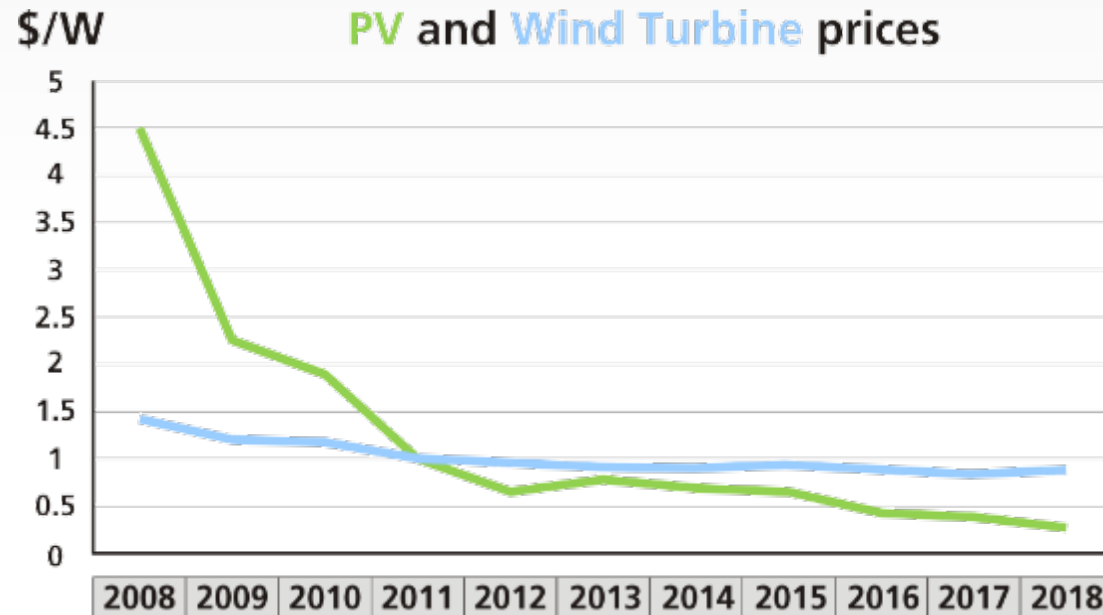
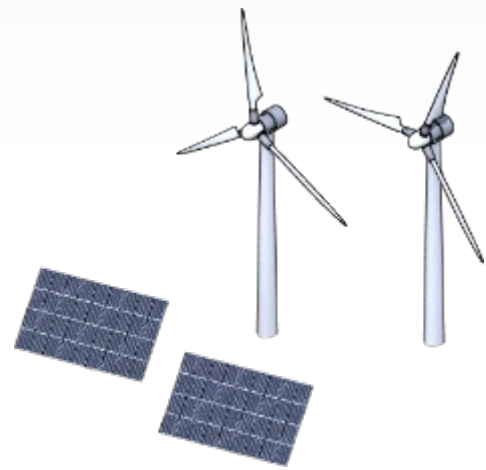
Until recently, mines and industrial facilities– as well as rural communities and islands – would procure electricity via expensive diesel or HFO fueled engines, subject to logistics challenges and fluctuations in fuel prices. Renewable energy was considered expensive and unreliable.

Rapid advancements in energy storage technology, as well as rapid cost reduction of renewable energy technology, coupled with increases in conventional fuel prices, all mean increased energy savings and better operational efficiency for consumers.



Abengoa in Energy

Climate change and cheap renewables The new reality



Decarbonization

Climate change

Emissions reduction

Decentralization

Digitalization

Autonomy

4IR

- Save electricity costs
- Improve security of supply
- Reduce or eliminate fuel supply risk
- Reduce or eliminate commodity price fluctuations and increases
- Meet climate change commitments and reduce emissions
- Meet sustainability goals
- Become independent from the grid and external fuel logistics, to become fully autonomous
- Bankable, competitive solution with attractive payback period.

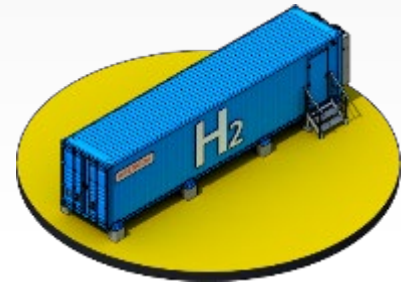
Solar prices dropped 94% in the last decade. Battery prices dropped 85%, and wind prices dropped 34% during the same period. Meanwhile, fossil fuel prices have increased over the same period, and are subject to commodity fluctuations and logistics challenges.

Technologies

Abengoa has a wide track record across a range of technologies, enabling us to optimize generation and storage profiles based on internal know-how for the requirements of each specific client and unique case



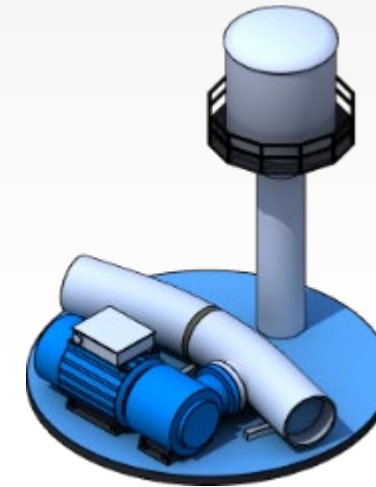
500 MW
Solar PV



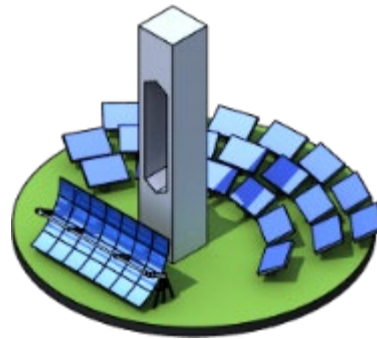
5 plants
Hydrogen



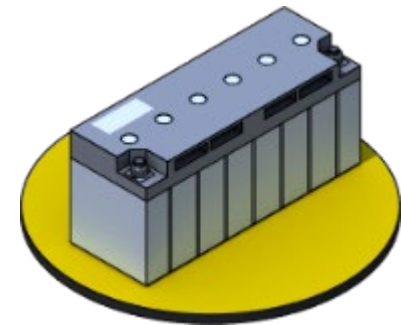
580 MW
Engines



1,100 Km
Hydraulic
Infrastructures



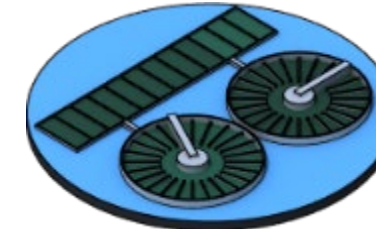
1,900 MW
Solar Thermal



14MW
BESS (Battery Energy
Storage)



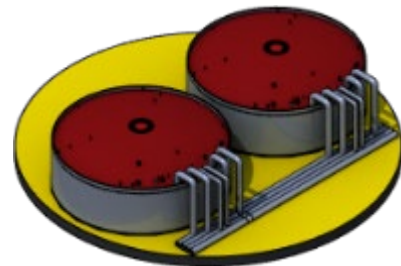
5,000 MW
Combined Cycle
Gas Turbines



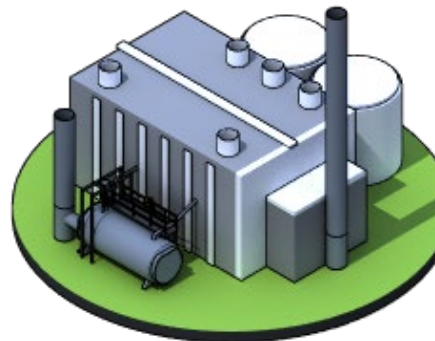
3.8 M m³/d
Water and
Wastewater
Treatment



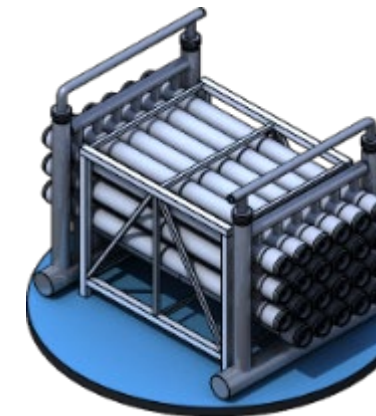
480 MW
Wind Power



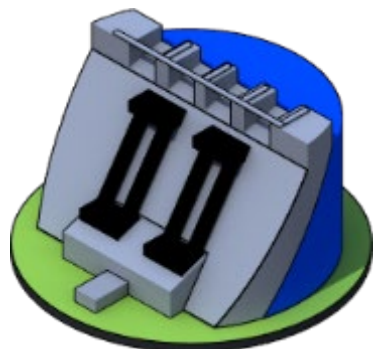
6,000 MWth
TESS (Thermal
Energy Storage)



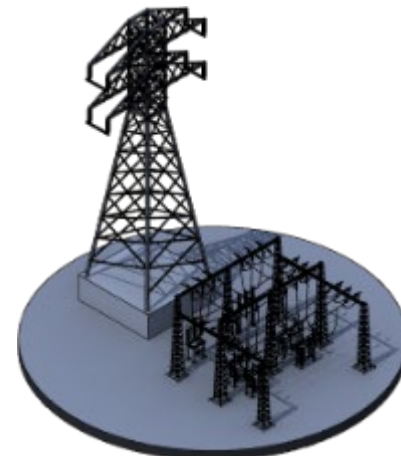
1,400 MW
Biomass/Cogen



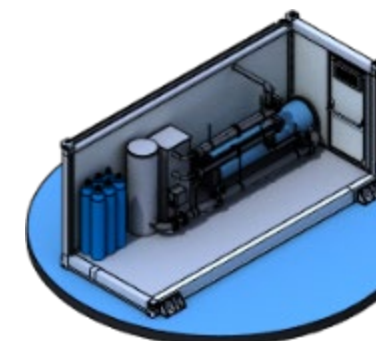
1.8 M m³/d
Desalination



400 MW
Hydro Power



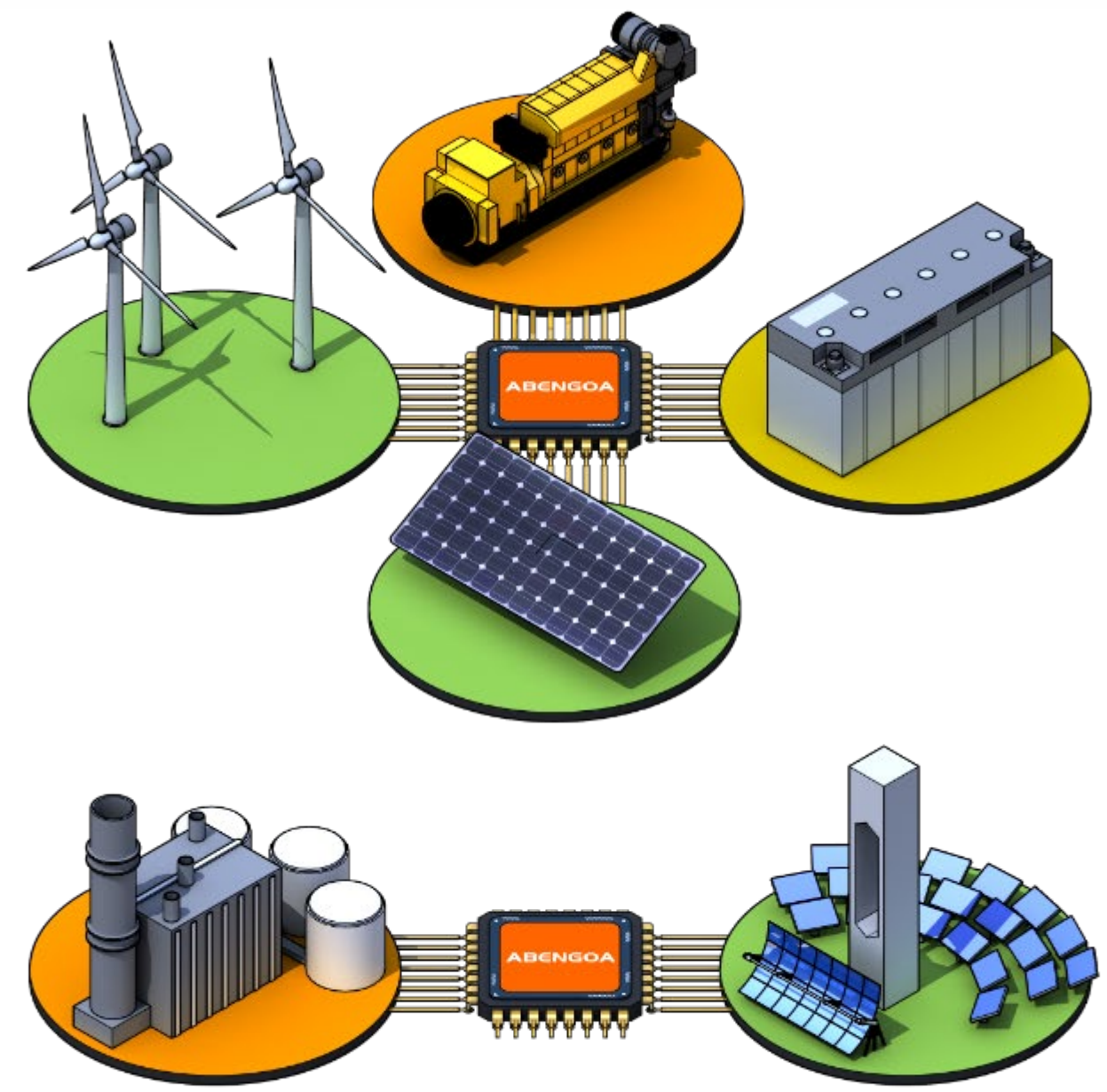
27,000 Km
330 unidades
Transmission Lines
Substations



650,000 m³/d
Industrial Wastewater
Treatment and
Reuse

Integration **capabilities** for microgrids and hybrid systems

Abengoa is able to provide a full wrap EPC Plus service, integrating a wide range of technologies and providing all the necessary guarantees, optimizing technical and commercial solutions to suit a client's specific operating requirements and needs.



Benefits of hybrid integration

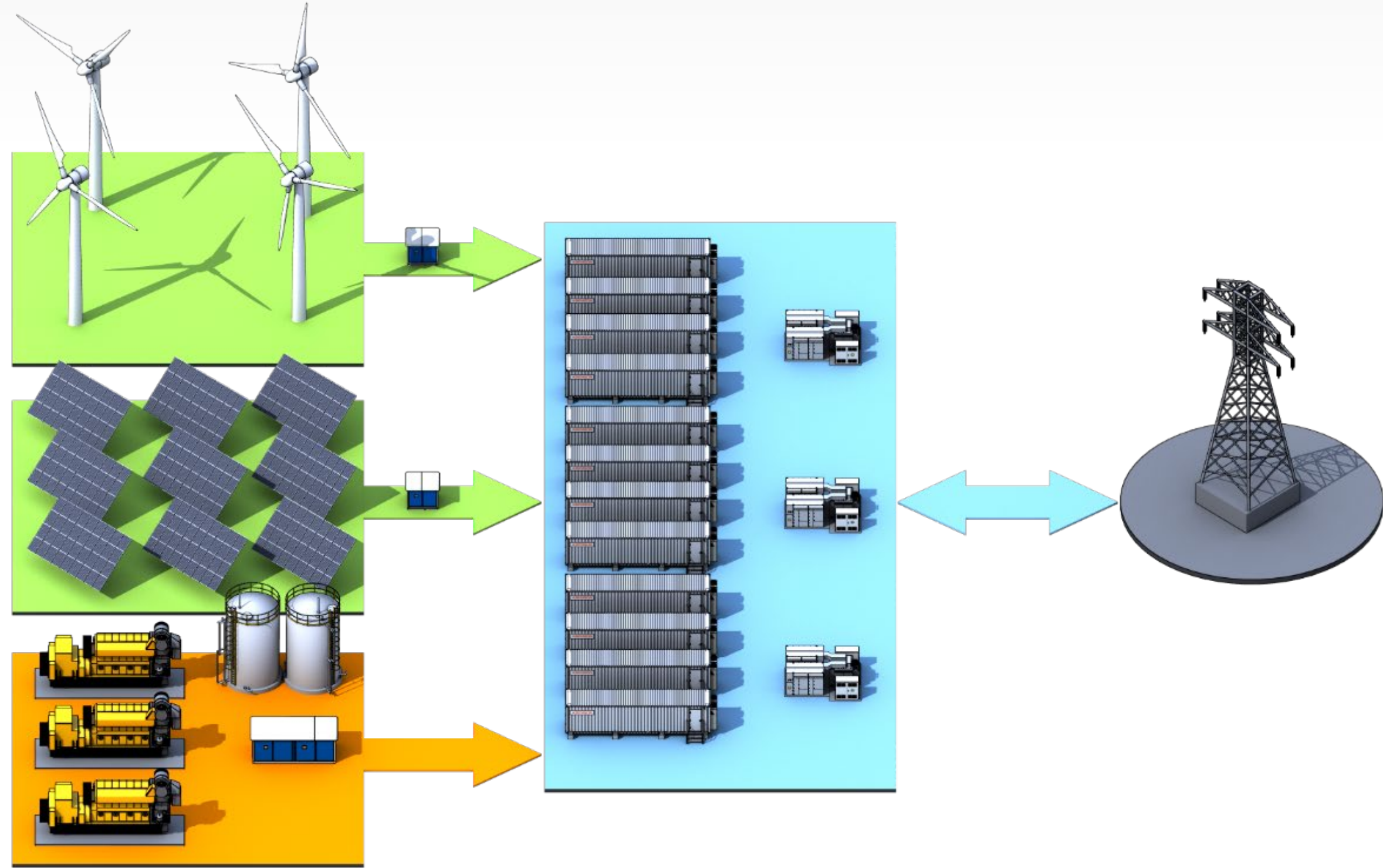
Why **Hybridize** your Power Systems?

Hybridization allows you to benefit from the advantages of each of the technologies.

Better performance and greater energy independence are obtained for isolated networks.

You can expand existing networks or start your transformation without interrupting its operation and in a phased manner.

Abengoa's experience allows us to design and develop bespoke solutions customized to a client's specific requirements to maximize value.



Hybrids and captive power applications – microgrids

Whether for a mine, an industrial facility or a remote island, Abengoa is able to provide customized solutions for dispatchable, sustainable power supply, based on the specifics of each site.



Hybrid **renewable** energy power plant

Dispatchable clean energy power plant case study
210MW Hybrid solar power plant with storage

Cerro Dominador, Chile

- Solar thermal and photovoltaic plant with molten salt and li-ion battery storage
- World's largest dispatchable renewable energy plant: 93.5% energy availability factor
- Technologies: STE + MS + PV + BESS Hours of storage: 17.5h Capacity: 210 MW

Molten salt storage system 1,925 MWh

High molten salt storage system to support long capacity.

STE +MS plant designed for baseload configuration.

STE+MS allows peaker operation

Three molten salt tanks configuration



12MW / 4MWh

High power battery storage system to support spinning reserve:

Integration of PCS + BESS into a containerized solution.

Auxiliary services, HVAC and PCI design and installation.

Development of the mechanical structure for BESS.



Energy storage

Cerro Dominador: 12 MW/4 MWh (Li-Ion)



- **General information:** commercial project. Application: Primary Frequency Regulation. Location: Atacama desert, Chile.
- **Abengoa scope:** technology selection (batteries, PCS and auxiliary equipment) and equipment integration in containers. Design of algorithms for the Energy Management System. Installation on site and commissioning / start-up.

Flexitranstore: 1 MW/2 MWh (Li-Ion)



- **General information:** project funded by EC (H2020). Application: provision of several flexibility services. Location: Athienou, Cyprus.
- **Abengoa scope:** technology selection (batteries, PCS and auxiliary equipment) and equipment integration in containers. Development of BESS new control algorithms. Installation on site and commissioning / start-up / monitoring.

Pegasus



- **General information:** european funded project. Microgrids.
- **Abengoa scope:** monitoring. Business case analysis.

Thermal storage



- **General information:** Abengoa has installed the world's largest portfolio of Thermal Energy Storage facilities, with a commercial storage capacity which exceeds 6,000 MWht and more than 4,000 MWht under construction.
- **Abengoa scope:** EPC.

Abengoa has a product development focused know-how of the different hydrogen technologies, with strong in-house engineering capabilities and experience.

Hydrogen production



- Hydrogen production with electrolysis.
- Hydrogen production by steam reforming of hydrocarbons or alcohols (fossil or bio).
- Engineering, procurement, manufacture, installation, commissioning and startup capabilities.

Fuel cell power plants



- Power generation with a fuel cell power plant.
- Engineering, procurement, manufacture, installation, commissioning and startup capabilities.

Energy storage in hydrogen



- Energy storage systems combining electrolysis, hydrogen compression and storage and fuel cell power plants.
- Engineering, procurement, manufacture, installation, commissioning and startup capabilities.

Hydrogen refueling stations



- Hydrogen refueling stations.
- Engineering, procurement, manufacture, installation, commissioning and startup capabilities.

EPC Vision

- ✓ Abengoa is a **world EPC leader** in renewable and conventional energy (more than 13GW installed).
- ✓ Global presence, **in-house engineering** and **O&M** capabilities.
- ✓ Abengoa offers **technological consulting** and **advisory services** in addition to the EPC to accompany its clients from the start.

+ 15 years in H₂

- ✓ H₂ production by **electrolysis** and **steam reforming**.
- ✓ Power generation **by fuel cells**.
- ✓ **Hydrogen Refueling stations** for H₂ vehicles.
- ✓ **Energy storage** combining electrolysis, compression, storage and power generation.
- ✓ Renewable gas production (**Power to Gas**).
- ✓ **Defense** and **aerospace** special projects.

Product Vision

- ✓ Abengoa's strategy contemplates the development of **innovative products** in the hydrogen sector, through **strategic alliances** with the main manufacturers and technologists.

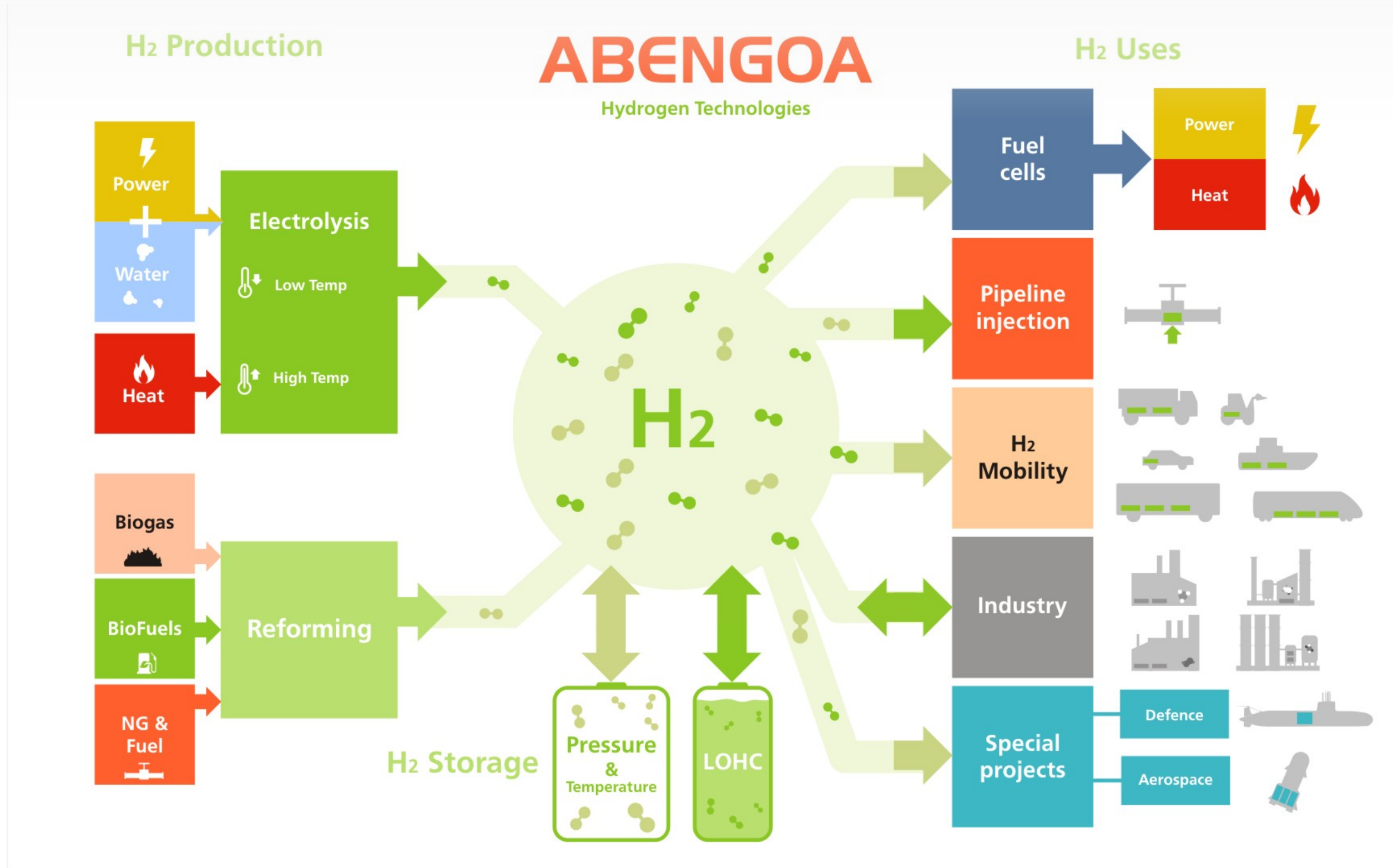
Decarbonization

- ✓ Abengoa has a wide portfolio of **hybrid solutions** for **decarbonization** and the energy transition.
- ✓ Solutions for the production of **renewable energy, green hydrogen** and its derivatives (ammonia, alcohols, biofuels, renewable gas).
- ✓ **Hybridization Specialist** (Renewable, Conventional, Storage, Smart Plant).
- ✓ **Connects the different sectors** of energy, transport and industrial.

Presence in H₂

- ✓ Member of Spanish Hydrogen Association (**AeH2**) and **Hydrogen Europe**.
- ✓ **References** in different hydrogen technologies.
- ✓ Abengoa is in permanent contact with the **"supply chain"** and can provide its customer with innovative solutions.





El Tesoro mining



- First CSP plant in Chile, largest industrial solar application in the world.
- This 14MWth plant has helped displace 55% of a copper mine's diesel consumption, reaching a highly attractive payback period
- Turn-key delivery for client site in the Atacama desert
- 1,280 PT-1 modules, 181,800 ft² aperture area, 6 hectares land usage
- Solar array provides thermal energy for 24x7 electro-winning process
- Providing 55% savings on diesel consumption under contract
- Avoiding 10,000 tons CO₂ annually

Abengoa 's Concentrated Solar Heat (CSH) technology has been performing in operation successfully since 2012.

- Abengoa's proprietary solar process heat technology has been proven to competitively beat diesel costs and even grid-connected or renewable energy prices for industrial heating and steam processes.
- For mining and industrial process applications such as petrochemicals, copper, zinc, manganese, lithium, cement, for example, we can in some cases reach a payback period of five- seven years by integrating this technology into thermal processes, displacing electricity costs or diesel consumption.

Industrial and mining sector experience



Abengoa with more than 75 years of experience, has proven experience in industrial sector, through references in all its four business areas.

In the industrial sector, Abengoa offers solutions for energy and water supply, wastewater treatment, installations and infrastructures required in this industry.

Renewables and energy storage

Conventional power generation

Water and wastewater treatment

Electro-mechanical supply, substations, transmission lines

Industrial solar process heat

Hydrogen

Abengoa is a pioneer in the hybridization of renewable and fossil fuel technologies, with decades of experience across renewable energy, engines, energy storage, transmission lines and water treatment.

- We developed a cogeneration plant in Pemex refinery.
- We developed the world's first utility-scale renewable energy plant with fully dispatchable solar with storage: the Cerro Dominador project has an energy availability factor of 93.5%, beating that of most gas fired plants.
- Abengoa is a global leading expert at hybridization of different technologies.
- Abengoa has a key focus on the nexus between energy and water.
- Supporting industrial companies for 75 years; stable presence in 20 countries.
- Abengoa has more than 30 years of experience in industrial water treatment, with more than 650,000 m³/day of treated water for different industrial sectors, such as power generation, steel production, paper industry, leachate, oil and gas, petrochemical, pharmaceutical, mining and food, among others.

Abengoa has worked extensively with mining and industrial companies around the world

Our
3 Presence



Our Presence



Water Treatment



Solar



Combined Cycle



Wind Farm



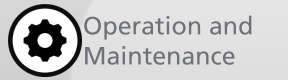
Engineering and Construction



Transmission Line



Railway



Operation and Maintenance

Africa

- Angola: Water Treatment
- Algeria: Water Treatment, Solar, Combined Cycle, Operation and Maintenance
- Ghana: Water Treatment, Operation and Maintenance
- Libya: Combined Cycle, Transmission Line
- Morocco: Water Treatment, Solar, Combined Cycle, Engineering and Construction, Transmission Line, Railway, Operation and Maintenance
- South Africa: Solar, Operation and Maintenance
- Tunisia: Water Treatment

Asia

- China: Water Treatment, Solar, Operation and Maintenance
- India: Water Treatment, Solar, Transmission Line, Railway, Operation and Maintenance
- Japan: Solar
- Sri Lanka: Water Treatment
- Turkey: Water Treatment, Railway

Central America

- Costa Rica: Transmission Line
- Guatemala: Transmission Line
- Nicaragua: Water Treatment, Transmission Line
- Panama: Water Treatment, Transmission Line

Europe

- Denmark: Engineering and Construction
- Spain: Water Treatment, Solar, Combined Cycle, Wind Farm, Engineering and Construction, Transmission Line, Railway, Operation and Maintenance
- France: Solar, Combined Cycle, Engineering and Construction, Transmission Line, Railway
- Lithuania: Railway
- Netherlands: Water Treatment, Combined Cycle, Engineering and Construction
- Poland: Combined Cycle
- Portugal: Combined Cycle
- United Kingdom: Combined Cycle, Railway
- Ukraine: Transmission Line

North America

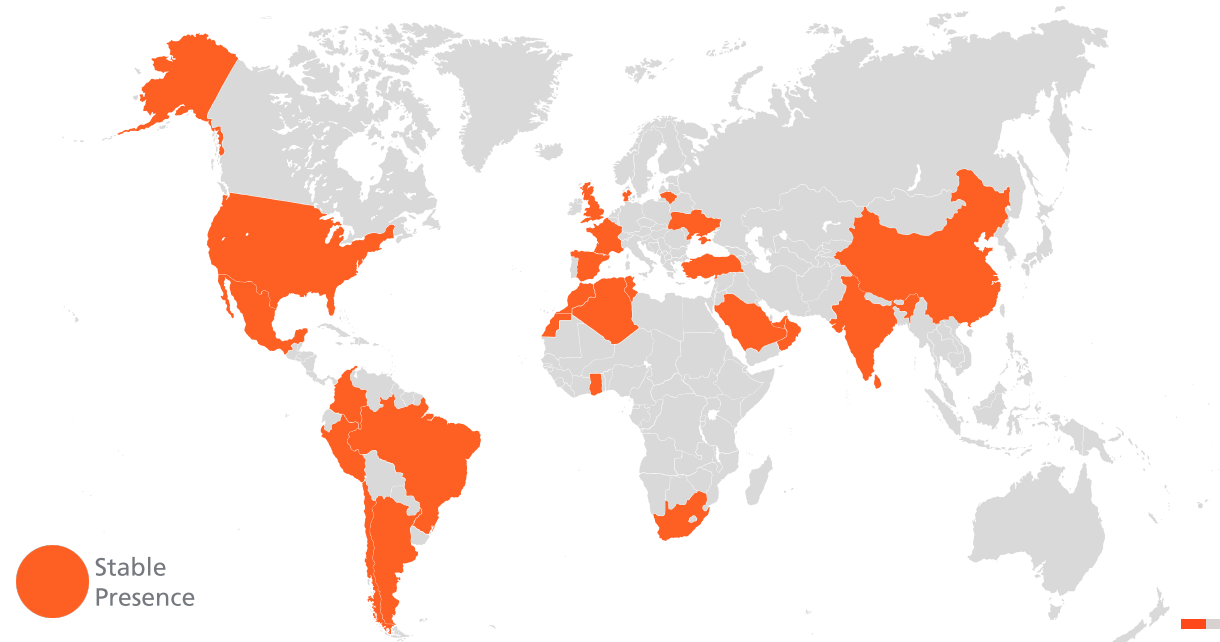
- United States: Water Treatment, Solar, Combined Cycle, Engineering and Construction, Transmission Line, Operation and Maintenance
- Mexico: Water Treatment, Solar, Combined Cycle, Wind Farm, Engineering and Construction, Transmission Line, Railway, Operation and Maintenance

Middle East

- Saudi Arabia: Water Treatment, Solar, Combined Cycle, Engineering and Construction, Transmission Line, Railway
- UAE: Water Treatment, Solar, Engineering and Construction, Transmission Line
- Oman: Water Treatment, Transmission Line

South America

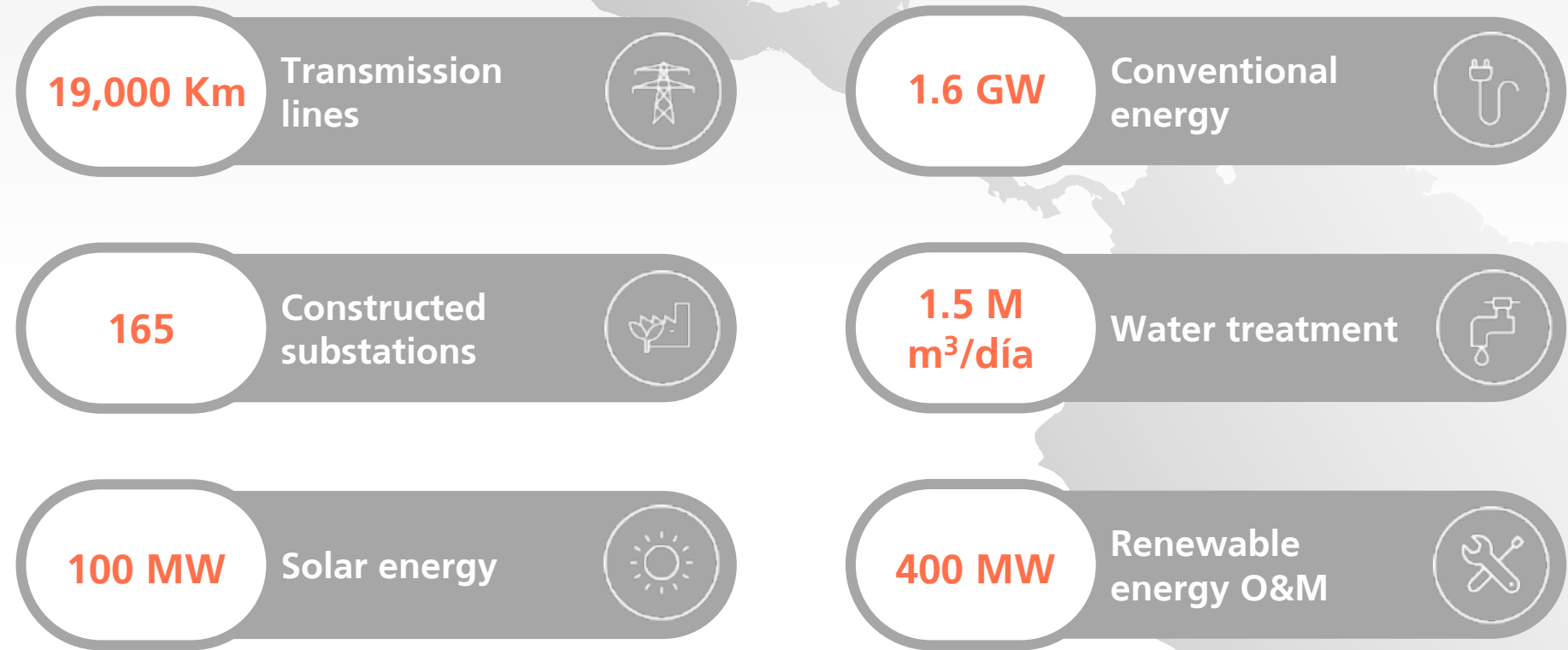
- Argentina: Combined Cycle
- Brazil: Combined Cycle, Wind Farm, Engineering and Construction, Transmission Line
- Chile: Water Treatment, Solar, Combined Cycle, Transmission Line, Railway, Operation and Maintenance
- Colombia: Water Treatment
- Ecuador: Water Treatment
- Peru: Water Treatment, Combined Cycle, Transmission Line
- Uruguay: Water Treatment, Wind Farm, Engineering and Construction, Transmission Line



Stable Presence

South America

Abengoa has been present in South America since 1968. In fact, the very first international projects were carried out in **Colombia, Venezuela and Guatemala**, and the first international office was opened in **Argentina**. From then on, it has become one of **the most important regions for Abengoa**.



Peru

Argentina

Uruguay

Chile

Brasil



Shougang Mine extension packages 4 and 5



500 kV Neuquen - Mendoza Line



Fishing terminal Puerto Capurro



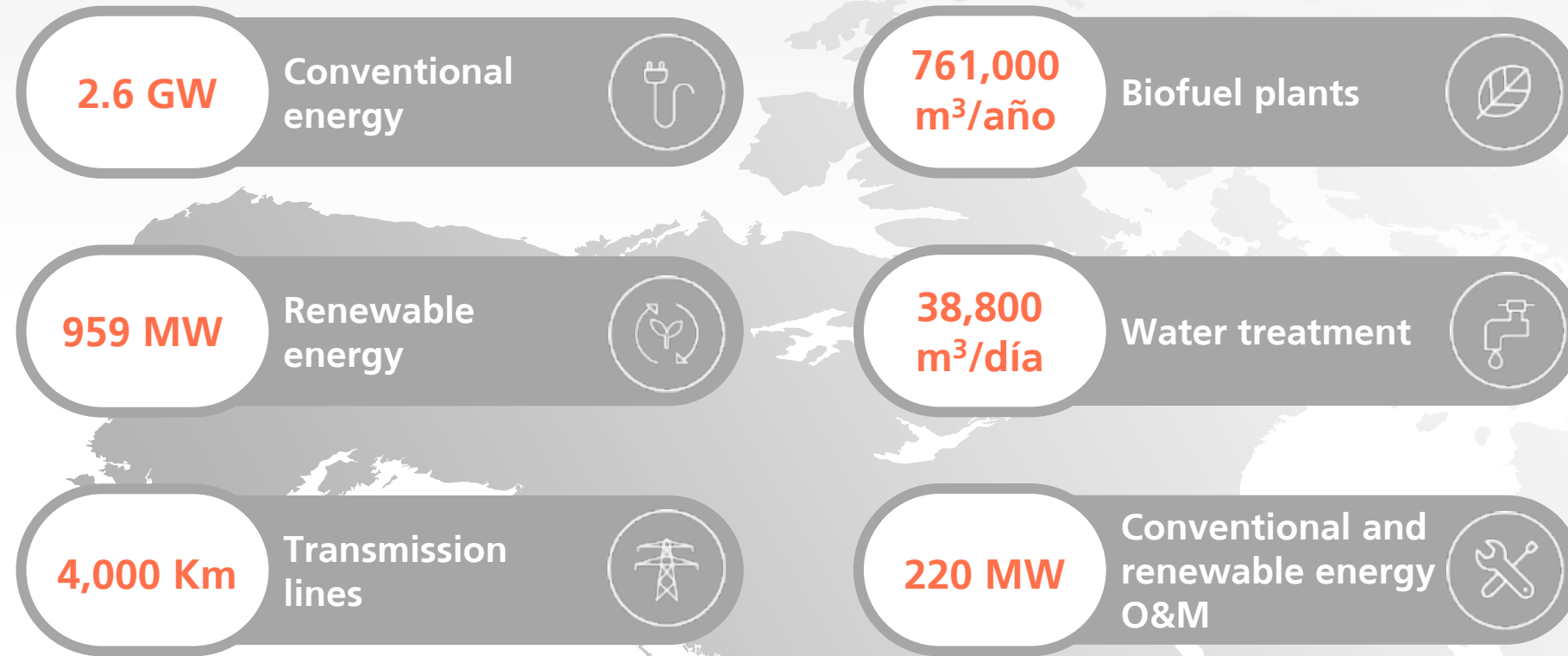
500 kV Changos - Kimal Line



Norte Brazil Line DC 600 kV 2,411 km

North America

Abengoa has achieved a commanding position in the **construction** and in the **energy** and **water** technology sectors in the United States and Mexico, particularly through its efforts in **solar thermal energy (STE)** and **biofuels** projects in USA, and through strategic activities in **conventional** and **renewable energy**, transmission, water and other buildings in Mexico, where the country has been operating for 35 years.



Mexico



A3T 220 MW

Mexico



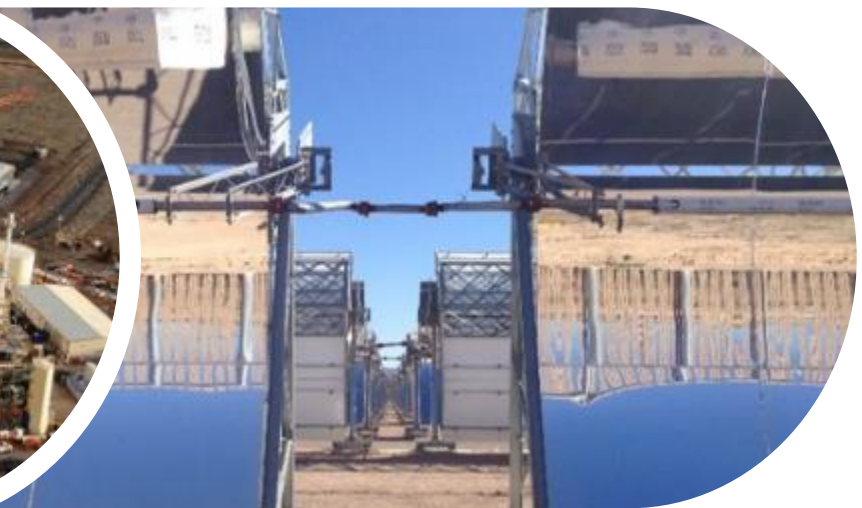
Centro Morelos 724 MW

United States



Sierra Biofuel plant

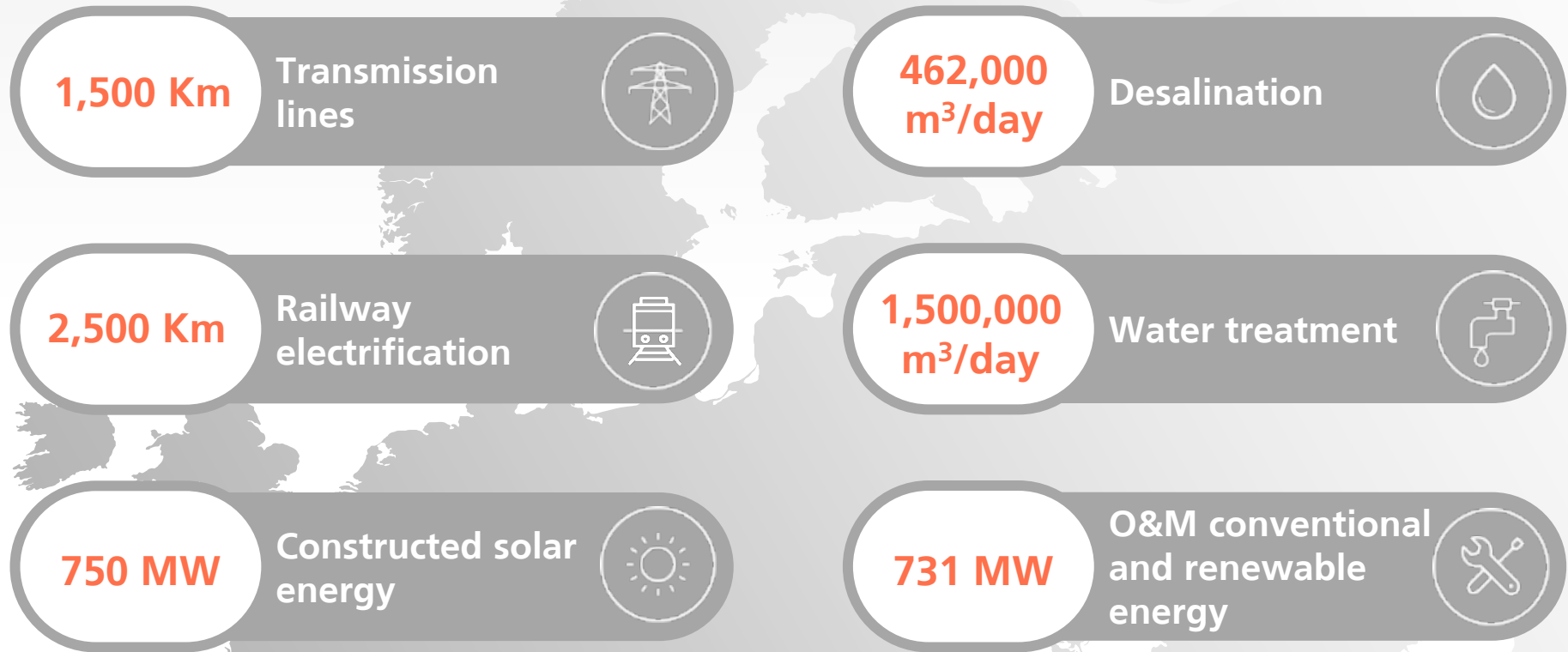
Mexico



Agua Prieta II 14 MW

Europe

Abengoa has undertaken a large variety of projects in Europe (**Spain, Belgium, France, United Kingdom, Netherlands, Ukraine, Poland, Denmark, Lithuania**). To be highlighted are the conventional and renewable **energy projects, transmission, railway, desalination, water treatment, hydraulic infrastructures and single-buildings**. The company also has the largest Solar R+D Center in the world and is both a pioneer and global reference point for this technology. This has enabled the company to develop new technologies and pioneering operational and maintenance services and systems for maximizing plant capacity and production.



Spain



Solar thermal plants

Ukraine



Transmission lines

Denmark



Electromechanical installations

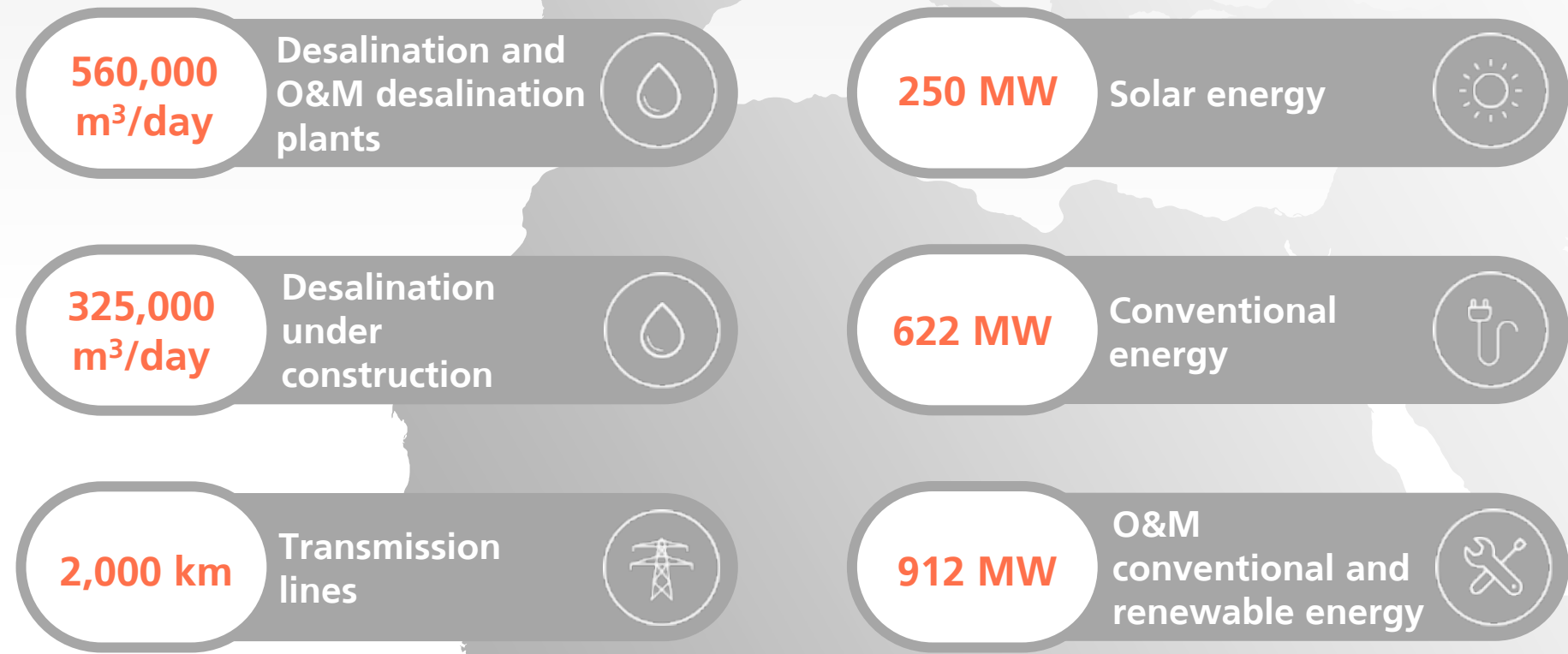
Spain



Desalination plants

Africa

Thanks to its efforts in constructing a number of solar thermal projects in **South Africa** and **Algeria**, in addition to generation and transmission projects across the continent, and water treatment plants, Abengoa has risen to become one of the key players in the **energy** and **water** sector development in Africa, in countries such as Algeria, Ghana and Angola.



Morocco

South Africa

Angola

Ghana

Morocco



Ain Beni Mathar



Xina Solar One



Cunene



Accra

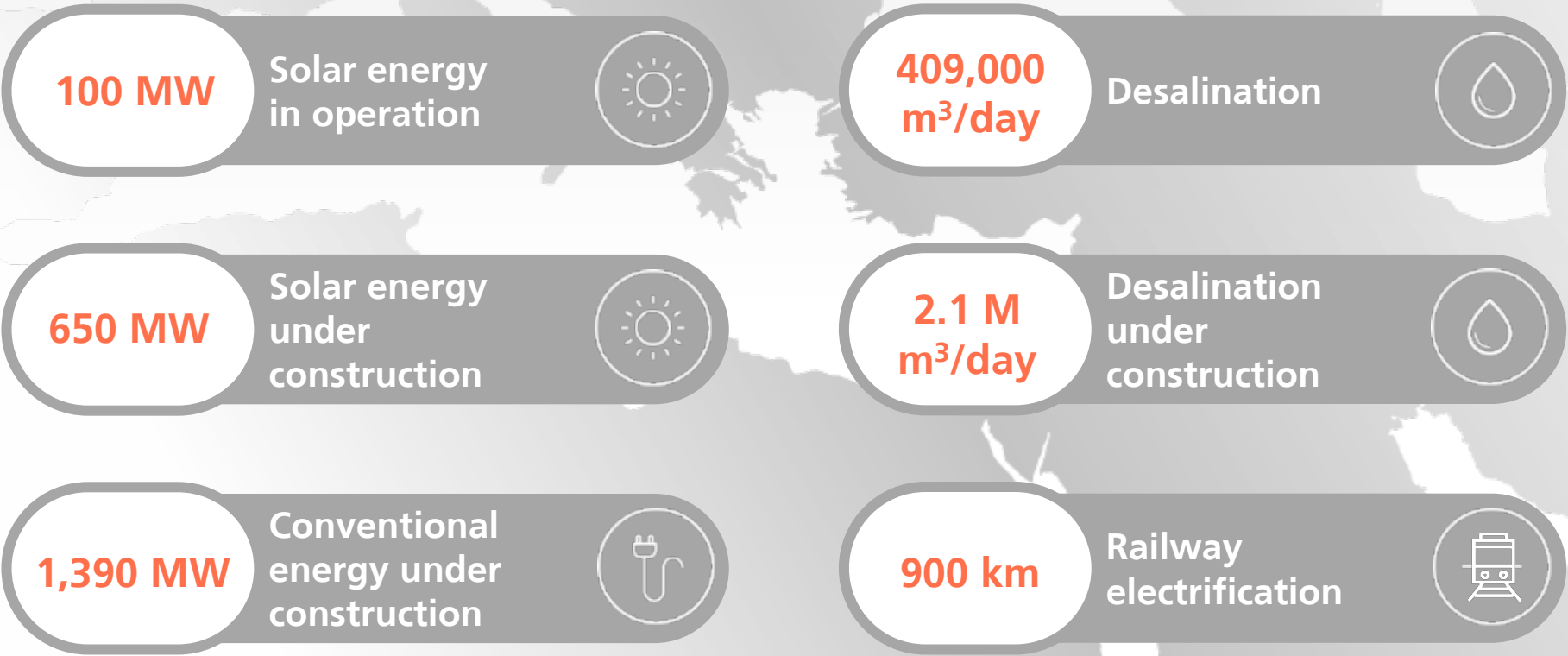


225 kV line

Middle East

Abengoa is present in Middle East, in countries such as **Saudi Arabia, Kuwait, Oman, Qatar and the United Arab Emirates**, where we are constructing the largest reverse osmosis desalination plant in the world, in Taweelah.

The company has a large backlog and pipeline of projects and opportunities, as well as offices in several countries.



Saudi Arabia



Waad Al Shamal

United Arab Emirates



Faya-Shamka Line

Saudi Arabia



Shuaibah Desalination Plant

Asia

Abengoa is present in Asia, in countries such as **India** and **China**.

The company has developed important projects in **water** and **energy** sector.

+1,000 Km

Transmission lines



200,000 m³/day

Desalination



880 Km

Railway electrification



20,000 m³/day

Water treatment



200 MW

Solar energy



200,000 m³/day

O&M desalination plants



India

China

India

China



Chennai desalination plant



Qingdao desalination plant



Transmission lines



Luneng

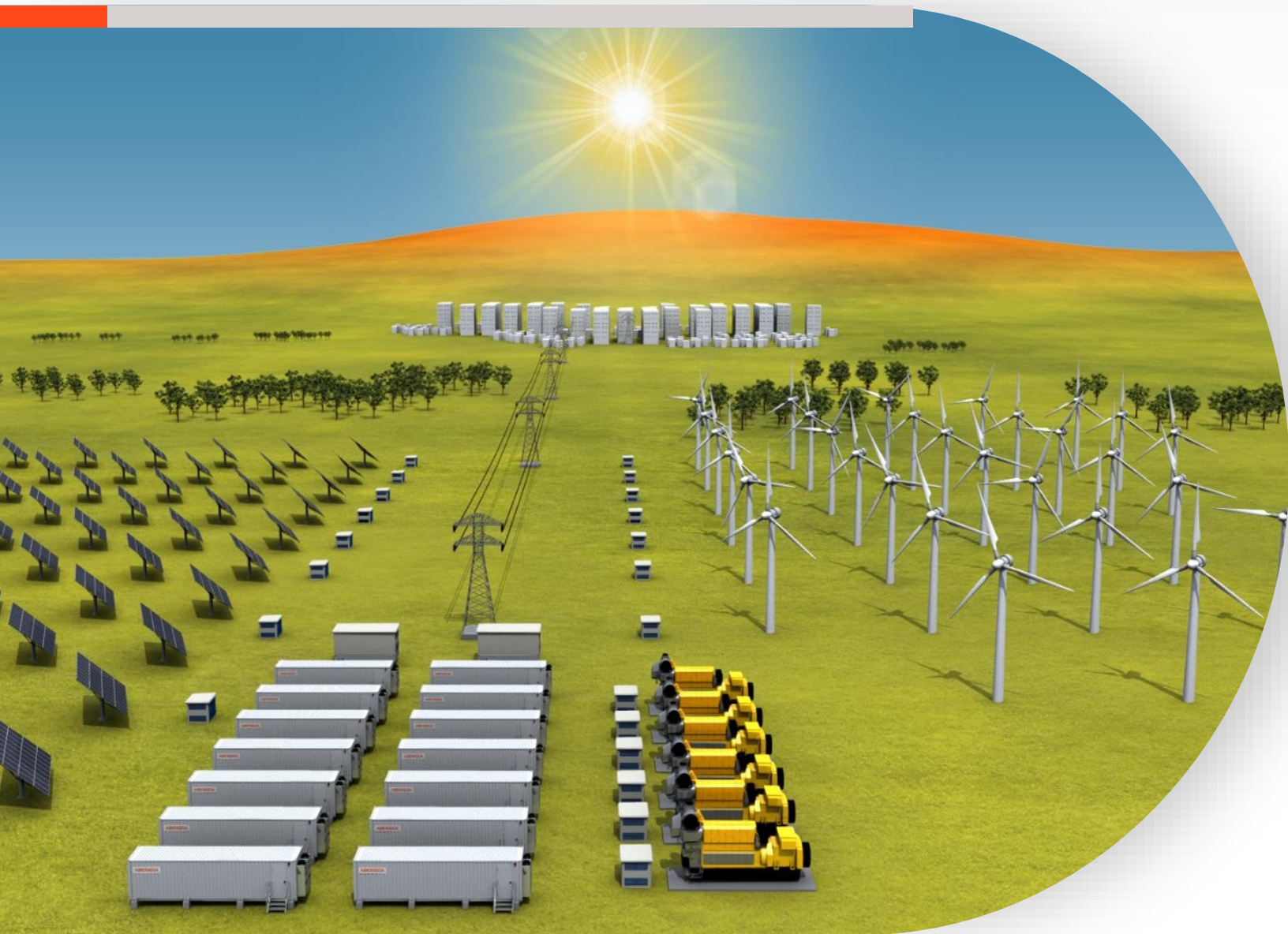


4 Conclusions

- Abengoa is an expert in the **hybridization of power plants to provide dispatchable, clean energy solutions.**
- Abengoa is able to provide a **full wrap EPC Plus service**, integrating a wide range of technologies and providing all the necessary guarantees, optimizing technical and commercial solutions to suit a client's specific operating requirements.
- Abengoa is one of the most experienced EPC contractors in the market with the capabilities to provide **affordable and reliable decarbonization solutions** for mines, industrial facilities and isolated grids.



Abengoa's focus on sustainability on the energy and water nexus allows us to partner with companies to decarbonize their energy and water systems with affordable and bankable low carbon solutions.



ABENGOA

Innovative technology solutions
for **sustainability**

Thank you. ■