

# Powering Change

The leader in the sustainable and renewable energy and environment industries, Abengoa is changing the world one day at a time.

Images courtesy of Abengoa

**A**bengoa is a company that is constantly looking ahead and never falling behind. It is looking at creating a sustainable world for future generations and solving today's problems all at once. Abengoa is a one-stop shop for design, engineering, management, construction, and operation in the energy and environment sectors. The company uses and invents innovative technology to provide solutions to generate energy from renewable sources, convert biomass into fuels, and provide clean drinking water to many parts of the world. With a history of more than 70 years in the energy sector, and more than 26,000 employees worldwide, Abengoa is a true giant in the industry. Executive Vice President of

Abengoa Abeinsa, Manuel Valverde, spoke to *The CEO Magazine* about Abengoa's history, its vision for the future, and how it has grown so quickly in the past 10 years.

Manuel, originally, was a mathematician, having studied mathematics at the University of Seville in his native Spain. After graduating with his bachelor's degree in 1986, Manuel got his first job at Abengoa and has been working with the company ever since. His first position was with the Abengoa subsidiary Abengoa Control Data (ACD), working as a software analyst and programmer. He worked developing high-level applications for the energy management systems branch, which required a move away from Spain to the corporation's

headquarters in the United States. "I am a mathematician," Manuel says. "When I finished studying I joined Abengoa's computer company in Minneapolis, Minnesota. I started working over there and getting involved in a lot of things."

After two years in this role, Manuel was promoted to a project manager position, overseeing a number of IT projects Abengoa was working on. These projects centred around developing real-time systems to control and optimise electricity networks and energy use, and allowed Manuel to get his first experience in a management role. After three years doing this, he moved into a commercial director position, in charge of the proposal team. "I started from an analyst and >



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position, Executive Vice President of Abengoa Abeinsa.

These experiences, Manuel believes, have made him a good leader who understands Abengoa and its culture. “As employees of Abengoa, we have to go to different locations, different parts of the company,” Manuel explains. “And we accumulate skills on how to manage different teams with different ideas, different cultures. From that point, I was moved to Spain and then I was assigned to the energy and water business, and I’ve been there for the past 15 years now.”

The company has been growing at an incredible speed for the past decade. Founded in 1941, the company has come into its own since the 1990s. Started by two engineers, Javier Benjumea Puigcerver and José Manuel Abaurre Fernández-Pasalagua, in Seville, Spain, and with an initial share capital of only €1,082, by 1960 the company had grown substantially and began to expand nationally, and had sales of more than €4.9 million. Following the national success, Abengoa began to expand internationally in the 1960s, starting projects in Colombia, Venezuela, and Guatemala, as well as opening its first international office in Argentina.

This growth continued into the 1970s, and sales hit more than €314 million by 1990. Abengoa had also started to focus on innovation in the late 1980s and early 1990s, and began subdividing the company into specialist subsidiaries. It was in this next period that the company came into its own; Abengoa refers to 1991–2003 as the ‘innovation period’ of the company, when it really started to shine. “Abengoa focuses its activities on development and innovation in the fields of information technology, renewable energy, biofuels, and the environment [during this period],” Abengoa’s official history states. “The company’s evolution from the original product line based on assemblies and

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programmer role, all the way up to a product developer, working with different teams and putting together proposals, initiating contracts and signing those contracts, developing products for our customers.”

The commercial director role meant that Manuel was in charge of all domestic and international quotations for the automation, control, and telecommunication projects that related to electric, oil, and gas companies. It was a lot of responsibility after only five years at Abengoa, and showed the company’s confidence in Manuel’s leadership skills. This confidence was shown again when after three years as a commercial director, Manuel was appointed project director of the company’s interests in Mexico. This meant moving south to Mexico, and being responsible for the automation of the country’s national gas and LPG pipeline. The project had a budget

of US\$120 million when it began in 1997, and Manuel had to manage a team of more than 125 engineers and 450 contractors.

After the huge success of the project, Manuel returned to Spain to take up the position of managing director of Abener, Abengoa’s branch that focuses on conventional solar and biofuel energy production. It was a large role, looking after international divisions, and allowed Manuel to focus on the growth of the business. He was very successful, as shown in the statistics of revenue and employee growth. When Manuel started the role, Abener had 112 employees, all located in Spain, and a turnover of €35 million. When he left the role in 2011, Abener had more than 1,000 employees in seven countries and a turnover of €397 million. This achievement no doubt led to Manuel being handpicked for his current

says. He believes the growth is due to the innovation and technology development of the company, and the urgent need in the world for their products. Around the world, governments and people are realising that unless they move to become more sustainable, soon the resources of the world will run out. “We have been growing really fast because what we are selling, the products we are selling in the company, matches the needs of the world perfectly. The world needs water, and it needs energy, and we are leaders in both sustainable energy and water, the combined conventional generation, and those sources of raw energy.

“We are the leaders in the transportation of energy. We are able to provide the right answers to the needs of the growing world. On the other side, on the water and environmental, we also provide solutions for water treatment. What we are seeing is that there are needs of water in areas where you don’t have water because it’s a desert and you need solutions like desalination plants. We have the best technology for desalination plants. But also there are some areas in the world where the water is not located where you need it; for example, in Brazil, and over there what you need is to treat the water or to transport the

water, and we also have those capabilities to supply and provide the solution for our customers. That’s the basis of the growth of Abengoa; we have the products that are required for the world to continue growing and to allow that growth to be sustainable.”

Manuel heads up Abengoa’s engineering and construction division, which is its largest and most profitable. As Abengoa’s website states, “Engineering and construction includes our traditional engineering activities in the energy and water sectors, with more than 70 years of experience in the market. We specialise in carrying out complex turn-key projects for solar-thermal plants, solar-gas hybrid plants, conventional generation plants, biofuel plants and water infrastructures, as well as large-scale desalination plants and transmission lines, among others.” It’s the most important part of the company, and so Manuel’s expertise is highly valued.

“We have the engineering and construction sector, we have the concessional sector, and we have the industrial sector,” Manuel says. “I’m Executive VP of the engineering and construction activity within Abengoa with special focus in strategic alliances and business development worldwide. The engineering and construction activity is the core of Abengoa and we have an excellent track record of performing on our engineering and construction projects, both for internal developments and for third-party customers. That activity is more than 60 per cent of the total revenues of Abengoa.”

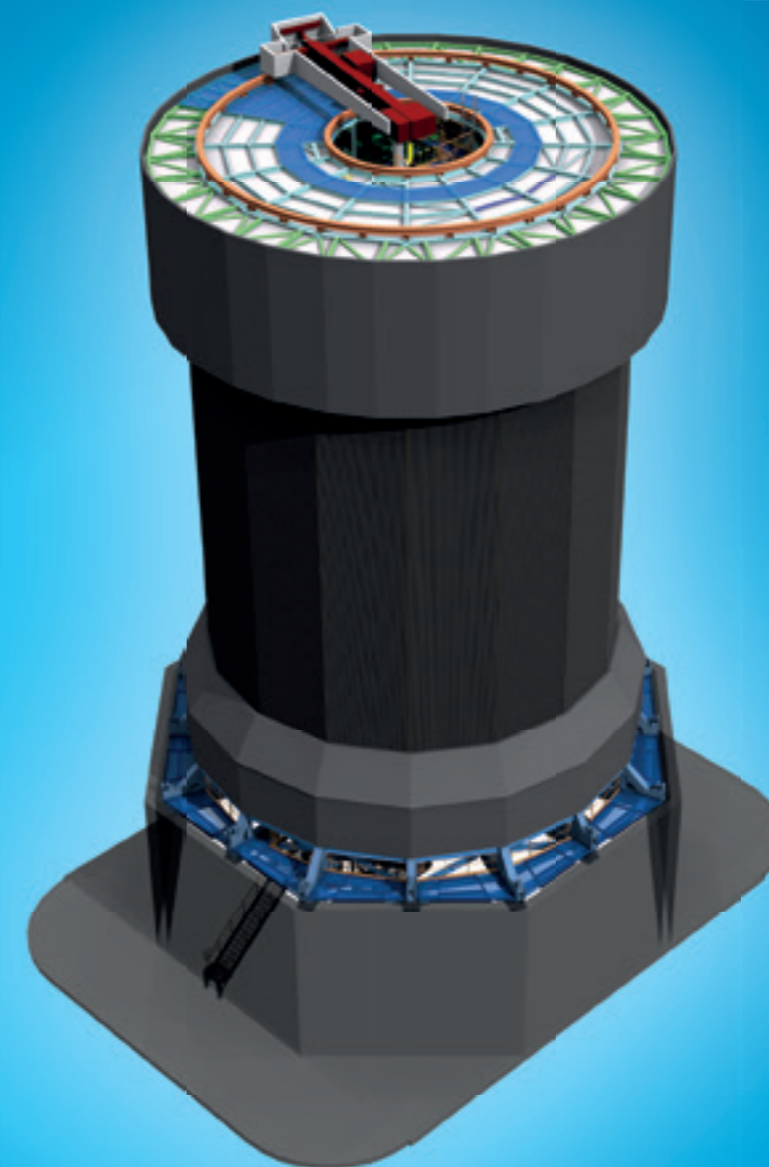
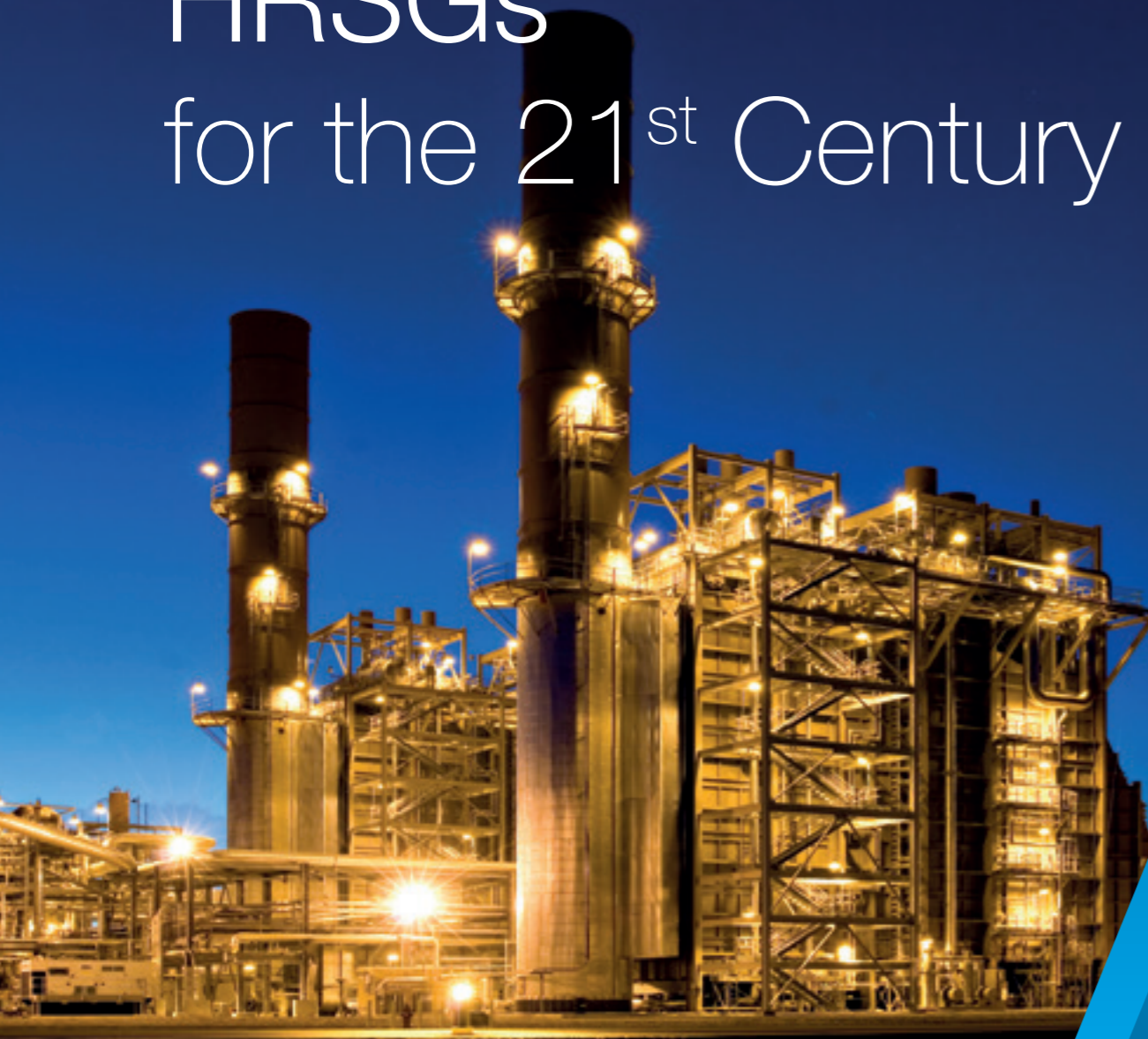
While having senior roles in such a fast-growing company has been extremely rewarding for Manuel, it has also had its challenges. The company has had to recruit people quickly, and has to try to ensure that its resources keep up with demand. Manuel has to weigh up the risks versus the potential for growth, as well as integrate a much larger workforce into one culture. How this has been done, he says, is





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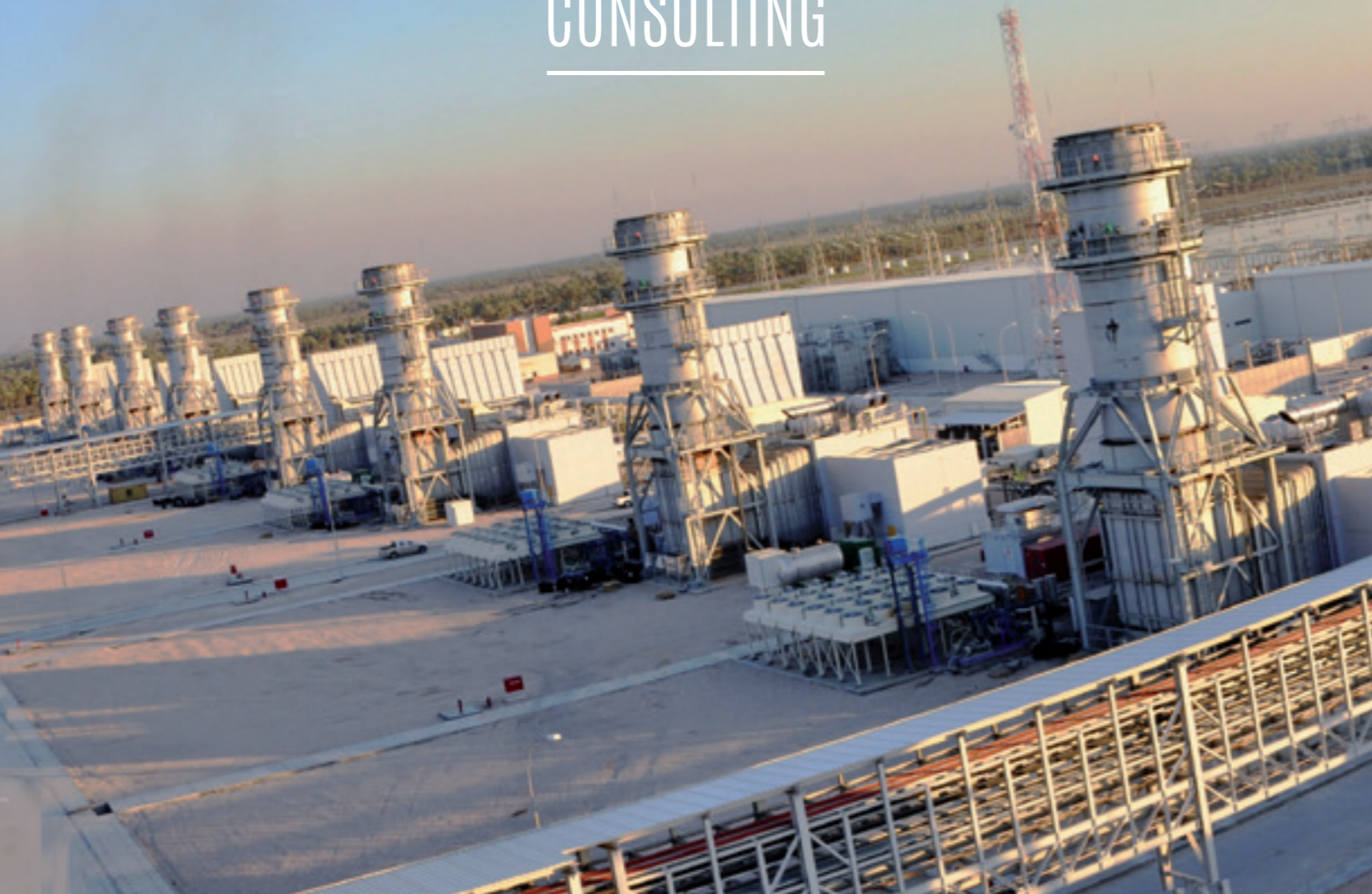


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by the implementation of a new management system that helps Abengoa to track each activity within the company, wherever it is occurring over the world. “The biggest challenge for a company like Abengoa, growing with the rate that we have been growing for the past few years, is to be able to integrate all the resources of the employees that have joined the company. Because we are growing worldwide, the challenge is to integrate them because all of them have experience and know-how, but they have to assimilate into our culture to make us successful. We have risk-control policies, but this doesn’t mean we don’t want to take risks. We want to take into consideration all the potential risks and then define a strategy to mitigate, eliminate and know the risks.

“The integration of the human resources has been the challenge—also the development of the technology. Keeping up with the development of the technology to differentiate ourselves is a challenge. We have been focusing on the areas where we really add value to our customers. That has been very significant. I believe that

the way that we have been able to overcome the challenges I’ve talked about is with the common management system that we have implemented in the corporation and into procedures that show everybody how we want them to perform their activity. That has been essential. That defines the feel of the company. It doesn’t mean that you can’t play outside of that, but it means when you want to go outside those borders you have to present to the management team what you want to do and why you want to do it that way. This allows us to communicate to our people what we want and what we expect from them.”

This sounds constricting, but Manuel is confident it doesn’t affect the company’s ability to innovate. Innovation is what has got Abengoa where it is today, and it understands how important innovation is to the company’s success in the future. One thing Manuel is extremely proud of is the company’s commitment to R&D and advancement of technologies. Abengoa has recently decided to develop a specific branch in the company to focus on R&D exclusively, and has hired

experts for this branch. “Innovation is key; it’s the business for Abengoa,” Manuel explains. “It’s essential for us to maintain our position in the market and it’s essential for us to be able to contribute to the development of the world.

“That’s why we have decided to concentrate all of our resources and R&D activities into one unit, Abengoa Research. We have also decided to hire people who are scientists, who are doctors, who have new approaches to the different solutions and different problems so we are able to find better alternative solutions to the same problems. That is key so that we can provide stronger solutions and better answers. I remember that 10 years ago when we decided to build the first solar plant, some people were saying that we were crazy, that we would never be able to compete against the existing companies, but we are competing now, and that has been done through innovation and through R&D.”

The other major contributor to the culture and soul of Abengoa is sustainability. Being sustainable >



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and ethical are the core values of the company, and the entire basis of the company's existence. "At Abengoa, we believe that the world needs solutions that will allow our development to be more sustainable. Scientists tell us that climate change is a reality, and at Abengoa we believe the time has come to pursue solutions and put them into practice. Abengoa focuses its growth on the creation of new technologies that contribute to sustainable development," its mission states. The company's vision is 'to be a world reference in the development of innovative technology solutions for sustainability'.

This applies to both the company's external projects, and the way it operates internally, Manuel explains. "We have a department

that takes care of sustainability worldwide. We have a common management system that applies to all activities and all the facilities that we have worldwide for every employee. And, of course, the core activity of Abengoa is sustainable development. We focus our different procedures on fulfilling Abengoa's goal of sustainable development. That is the main guideline for everything we do at Abengoa; we have to be sustainable ourselves, and we have to provide sustainable solutions to our customers."

These values are extremely important to Abengoa, and it only partners with suppliers and stakeholders that can commit to them. Manuel wants the best suppliers and best partners, but only those who have the same vision as Abengoa. This is



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important to the company, because a shared vision is, Manuel says, essential to success. Because of this, Abengoa has mainly developed long-term relationships with suppliers it can trust. "The first thing is that our suppliers have to fully understand and commit to sustainability. That is key, otherwise that relationship will not survive. It's essential that both of us understand in the same way how we want the world to develop. From that point, our technology is key and innovation is key. We have to define our partnership with people that we cooperate with because we need to be the best in everything that we do. We need to have the best partners and the best solutions. That's why we normally have recurrent suppliers that we develop to provide solutions."

Abengoa also is committed to continuously receiving feedback, and strives to constantly improve its relationships with suppliers, customers, and investors. "We have processes to ensure they perform to our standards that we require for companies to partner with us. We have the same process with suppliers for feedback as we do with our customers, so whenever we send the contract out and when we finish the contract with them we get that intelligence," Manuel explains.

Communication and feedback are essential to this process. Abengoa works with suppliers and customers to get a sense of expectations when contracts are >





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signed, then returns to the partner after a project has been completed to find out if expectations were met. These results are communicated to staff to ensure that if there were any problems, Manuel and his team can improve for next time. "We have good communication with our employees and a program to receive their recommendation and to receive their opinions about the things that we normally do.

"With our relationship with our customers, we have two times when we ask for feedback: when we sign the contract, and then after our plants are delivered. We compare their expectations with the real solution that we have after two or three years of really hard work. We collate all the feedback so we are able to retrofit that information through all of our communication and internal procedures. We have a department in Abengoa to cover information coming from suppliers, information coming from clients, and information coming from investors. We take all of that and do a review—one

review every six months—and we communicate to our employees that feedback."

For Manuel, though, it's a two-way street. Abengoa needs to also prove that it is worthy of business, and to do that it needs to work hard. This is what sets Abengoa apart in Manuel's mind: its hard work coupled with its advanced products, a result of the company's innovation. "It's about hard work. If you want to get a contract you have to show how good you are, you have to prove to the customer how good you are to get the contract and then you have to perform. It's more difficult to maintain that discipline, and I believe that's a key factor that differentiates Abengoa. The other one is technology. We have best-in-class technology with the different products we supply to our customers."

All of these factors combined—innovation, company values, and great partnerships—have contributed to Abengoa's success. The company has been able to complete a number of remarkable



Solana solar project



"If you want to get a contract you have to show how good you are."

- Manuel Valverde

projects and world firsts, putting it well ahead of its competition.

"We have a number of projects that we are very proud of. One is the Solana solar project [in Arizona, US], which operates almost 24 hours a day. It's a landmark for us; it's a project that we are very proud of. Also, we have a project where we are transporting energy in Brazil, with transmission lines for kilometres stretching the distance between London and Moscow, but through the jungle. Those transmission lines have been able to transport energy from the north of Brazil to isolated parts of the south where you need that energy. We have also built some desalination plants in India and China that we are very proud of because they are providing potable water for people who were suffering water scarcity. We are also very proud of our >

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production of ethanol—we have one of the largest ethanol plants in the world. We built that plant in Rotterdam and it produces 480-million litres a year, and that is a huge contribution to the reduction of CO2 emissions because it replaces gasoline in cars.”

For the future, Manuel says that Abengoa plans to continue to grow and maintain its position as a market leader. The company is continuing to invest in innovation and research, so that the technology and products can

continue to be developed. “We are working really hard and we will continue working really hard to maintain Abengoa’s leadership position in the sectors where we are. It’s key for Abengoa to remain in that position. We want to make sustainability technology compatible with the conventional means of energy production, but also at the same time we want to increase our presence to increase this kind of development. Sustainability is key right now in the world and we are working really hard on that,

*“Abengoa was among the first water infrastructure companies to implement UF pretreatment in SWRO plants. During the past decade, our valued partnership presented the opportunity to implement and further develop our technology in new geographical regions such as China and the Middle East.” - Alejandro Roman Fernandez, Global Sales Director - Strategic Projects, Pentair*

because we need renewable energy and then we need ways to store that energy.”

The industry will also, Manuel says, continue to grow. As the world population swells and resources dwindle, Abengoa’s market will continue to grow. Water and energy are essential to human life, and without them society will crumble, so investment in renewable and sustainable resources is extremely important. Manuel believes that the demand for Abengoa’s services will increase quickly in the coming years and the company is preparing for that. “I think that renewable energy must be the main source of energy if we want to maintain sustainable development, and the integration of that with conventional means of energy generation like power plants is essential for the world. That’s why we’re focusing our developments on that area, and on the aspect which we believe is essential, which is the application of those renewable means of energy with production of water.

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“The production of water has a high energy demand. Right now, the problem is that whenever you need water, normally you don’t have energy. We’re working on that now also. If we’re able to integrate the production of water with the generation of energy through renewable means, that would be key for the future development of the world. The world needs less emissions of CO2, it needs more water, it needs to transport the water, and the population is increasing. You need to be able to produce additional water and energy without increasing the CO2 emissions. That’s why renewable means are key.” •

*“TRI is a leading technology provider for renewable fuels. After extensive due diligence Abengoa chose to work with us in this emerging market. Abengoa, a true EPC provider, has deep process and execution competence to engineer, procure, and construct state-of-the-art biorefineries.” - Daniel A. Burciaga, CEO, TRI*