Exel F. ColÃ³n â?? President, ECR Engineering, Puerto Rico

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Exel F. Colon, President of ECR Engineering, a Puerto Rican company specialized in water and wastewater treatment with expertise in the life sciences industry, explains what makes water critical for life sciences manufacturers, how his company helps them reduce water consumption, reduce costs and comply with regulations. He also shares how he tries to get young Puerto Ricans more involved in environmental engineering by bringing the Stockholm

Junior Water Prize on the island.

Could you start by introducing the activities of ECR Engineering to our international readers?

ECR Engineering is a company specialized in water and wastewater treatment. We plan and design water and wastewater systems, while our sister company, IGS, provides maintenance to these

systems. Companies whose core business depends on water quality, quantity and availability are in need of special services like the ones we provide. Key challenges for them lie on how to responsibly dispose of the water in contact with products and how to improve its use, applying reuse and recycling activities to the daily operations. About 60 percent of our business comes from the private sector, among which Life Sciences play a key role, not only due to the volume and revenue it drives, but also because this industry is very demanding so it acts as a portal for us to many other projects and sectors like Food & Beverage and Municipal. We also use the life sciences sector as a springboard to expand to other countries. We work in the British Virgin Islands, the US Virgin Islands, Colombia, Panama, Peru, Dominican Republic, Jamaica, Puerto Rico, and the United States, mostly in south eastern states. We have people there, but the design work is mainly performed in Puerto Rico and products are then exported.

What have been some of the landmark projects you have accomplished recently?

In most projects, our clients have some challenges with compliance and regulatory agencies. For example, a medical device company had environmental compliance challenges. We got into their system and reconfigured everything in terms of water management, including the operational culture. We assisted the client by optimizing their daily water consumption, reducing it by nearly 50 percent, as well as transforming wastewater in a valuable resource that is now recycled in their utilities

Water is a critical ingredient in pharmaceutical operations including production, material processing, cleaning and cooling. How do you help pharma manufacturers achieve a reliable and consistent supply of water purified to the required quality?

We follow a multidisciplinary approach. Our team is composed of architects and engineers including environmental, mechanical, electrical and chemical disciplines, as well as chemists and surveyors. We start by understanding the basics, such as where the water comes from (source), that will tell us about its quality and how it should be treated. Then we need to understand how it is used in the process: Is it part of the raw material or it is used for cleaning? How is it managed after use, where is the final disposal? Once we have the basic information, we produce a water balance, which will tell us how much water is utilized and where, resulting in the water baseline. Most clients know how much water they buy, because of their monthly bill, but do not know if that is high of normal consumption. Utilizing the baseline, we will establish minimum requirements for guarantee supply and quality, as well as to open the door for optimization.

How have the needs of life sciences manufacturers evolved when it comes to water and wastewater treatment?

While one out of five clients are concerned about environmental commitments, most companies come to us to reduce costs or reach compliance. I would say, over the years they have become increasingly aware of how not optimizing their system can hit their wallet. Once companies know their Return on Investment is two to three years, they are all in. In terms of compliance, it is seen as a very hard expense for the whole industry.

How did Hurricane Maria impact your business?

Just after Maria, everything was stopped. All construction activities were focused on repairing the damages. But during the last year and a half, it has started to be interesting again. Companies are investing in water and wastewater treatment systems, potable water storage, building co-generation plants and integrating wastewater treatment plants as a resource during emergencies. We have been talking about these for the past ten years and now it is finally happening. On the public side, the EPA recently cleared the way for much needed funds to improve Puerto Ricoâ??s water and sewer systems and ensure that the people have access to safe and clean water. According to PRASA officials, projects should start in fiscal year 2019 â?? 2020. Maria has been tough for Puerto Rico, but I think there is light at the end of the tunnel.

How does ECR Engineering and the environmental engineering industry contribute to attracting, developing and retaining talent?

When it comes to talent too, there is a before and after Maria. Although we have been suffering from the departure of engineering professionals for the past five years, there was talent available, now it is very difficult because most of the engineers who stayed are busy working for temporary projects for insurance companies, FEMA, etc. We are very active participating in professional organizations and sponsoring activities for engineering students and high school investigation competitions.

ECR Engineering recently sponsored the Puerto Rican chapter of the Stockholm Junior Water Prize 2019. Could you tell us more about the competition and why you chose to support it?

I found the idea of getting young high school students involved in the unique field of water treatment extremely compelling. As President of the local Members Association of the Water Environment Federation, I started planning to bring the competition to Puerto Rico in 2009. In high school, nobody talks about environmental engineering. As a result, there are very few students who know the field exists and decide to pursue studies in it. Consequently, there are very few local players. I think we have the resources and people to be experts in water treatment systems. This is the reason why I started my business, to become a specialist in the field, start modeling and study how wastewater systems behave in the tropics.

What is your vision for ECR Engineering in the upcoming five years?

I want to keep working on the field, identify the emerging issues and provide solutions. Resources need to be provided to the field on an international scale. Our team loves to work on innovative projects that are different from what everyone has been doing for the last 30 years. We have evolved and have a group of people with different backgrounds who are all committed to excellence. I see ECR Engineering consolidating its presence in Puerto Rico, and South East of US with a constant growth in the healthcare and life sciences fields. Puerto Rico has great people with excellent professional skills that are ready for any challenge.

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