

Santiago Barcón

Chief Executive Officer
at PQBarcon

Interview with **Santiago Barcón Palomar**

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Alan Ross: Hi, I'm Alan Ross. I'm the Managing Editor of APC Media's publications, Transformer Technology, Power Systems Technology, and Women in Power Systems. We're here at the IEEE PES T&D conference in Anaheim in 2024, the 60th anniversary. My next guest is Santiago Barcón Palomar, the CEO of PQBarcon, in Mexico City, MX. Santiago, I enjoy interviewing you because you are such a unique individual. First, you've got your hand in a lot of different things: publishing, manufacturing, you're an author, and future author. You have a lot going on. Tell me a little bit about your life.

Santiago Barcón: Well, I have been in the power industry for almost four decades, and I really enjoy what I do. We always say in Mexico that artists and bullfighters do not retire, so I don't have any retirement plans whatsoever. I'm working as much as when I was 20, 30, 40 years old, and I enjoy it every day.

As you mentioned, we have *Energía Hoy*, that is a leading magazine in Mexico on the energy sector. We cover the full scope of the energy industry, but since I am an electrical engineer, we lean more toward the electrical industry.



Also we have a media site and magazine with a green technology focus, called Greentology into what I will call ESG, renewable energy, and everything that is friendly with the environment. Besides that, we are a manufacturer of capacitor banks and harmonic filters, both in low, medium, and high voltage.

We just recently got an order for three big banks at 230 KV for USA. That is the holy grail in the power industry. We are very happy with what we are doing in the manufacturing sector.

Last, but not least, my next book is already in the print press. The first one was very technical, power quality, harmonics, and power factor correction. This one is more focused on the youngsters, and not so young, who have not followed what I consider the best path in engineering. It's called "How to be a Good Engineer, 10 Commandments, and 100 Tips to Achieve It".

It is a short book, about 180 pages, because as I mentioned, it is focused on younger engineers who I believe don't read that much.

It offers small bits of advice, for example, "when you leave college, go to a place where you are going to learn, not because they will pay you 5% more". If your boss is not intelligent, resign. You are not going to change him, and he might make you stupid and lazy, or both. That will be worse. We have already sold several books, so I'm quite happy with it. People are ordering it to give to younger people in their company.

AR Is it digital and print?

SB Digital and print.

AR I'm going to get a print copy.

SB And besides that, once that is finished, we will translate it to English.

AR Excellent. Since my Spanish is rudimentary at best, I'll wait for the English version.

SB I think that there's nothing like that. Before I started to discover the lukewarm water, I looked for it on Google, Amazon, Barnes & Noble, everything. I couldn't find it. There's a lot of books on how to study engineering, but not practical advice for ones that are out of college.

AR Primarily electrical or any engineering discipline?

SB I mentioned in the prologue that, because I am an electrical engineer, we have a focus on electrical issues, but I try to cover all the areas of engineering. But what is nice is that it is also focused on women in the power sector. In chemical engineering and environmental engineering there are even more women graduates than men in Mexico.

AR We'll have to get you involved in our Women in Power Systems community and magazine. One of the reasons why I like interviewing you is because you have your hands in so many things, publishing, manufacturing and I know you are also a passionate wine aficionado. But for now, let's stay focused on the power industry.

SB I'm going to give you some figures from the Electric Power Research Institute (EPRI). Bad power quality costs the US economy \$188 billion per year. The total invoicing for the consumption of electricity is around \$600 billion. Of course, this is not just the energy that is not supply. It's when you have a sag and the equipment stops. More importantly, 80% of the problems are inside of the consumer. It's not in the grid.

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Leonardo Energy, the European equivalent of the EPRI, finds about the same figures, €160 billion is the cost to the European economy and 80% of that is inside the customer's system.

AR The more robotics that we place into manufacturing 4.0, the more

susceptible we are to power quality issues. Because the robots weld the cars, and if one robot, which also has a transformer doesn't do the task, the weld is affected and the car leaks. I know that oversimplifies the issue, but in many cases, the power quality issue become product quality issues and more likely productivity issues.

SB I can attest to that as a big US manufacturer in one of their plants in Mexico has had a lot of power quality issues. It was about 15-20 years ago that they installed their first robot. Because of power for quality, it committed hara-kiri because it did not run the program properly. Of course, they did not laugh, but I think that it was great illustration of what can go wrong.

AR That's why you're not saying the name of the company.

SB Yes, that's why I'm not saying the name of the company.

AR Robot committed hari-kari, that is a great illustration of what can and does go wrong. I know that you produce products that alleviate these types of issues, right?

SB Yes, and the problem is going to keep on growing, with all these renewable entrants, everything is becoming electrical-driven. There are more harmonics because there are more inverters, even air conditioning,



mini-splits, and refrigerators. They are inverter-based to save energy. And of course, the byproduct is harmonics, so we will be there to help.

AR And green energy is the inverter-based system. The more we grow green, the more problems we create.

SB That is why some inverters are what they call grid-forming. People worry about it, but we will find a solution. We will find a solution.

AR The United States Marines runs ads that say, "We run to the trouble". I'm a mechanical engineer and I find that engineers run to the problem because we solve problems; we don't run from problems.

SB In the book, I mentioned that we need to control that urge because that creates a bad economic situation for most of the engineers. We give too much free advice because we like to solve things. And doctors and lawyers, they just keep it to themselves. We need to learn from these guys. (Laughing)

AR Let's move from manufacturing back into publishing. Talk about your publishing, particularly *Energia Hoy*. As soon as we get this done, we'll do an MOU where once an issue, we will publish one of your articles, we'll transcribe and publish, and then we will provide one to you to transcribe and publish. Talk about how you got into that. Did you just wake up and decide you were bored?

SB I went into the Office of the Energy Savings Government Bureau, and I saw *Energia Hoy*, issue 2. I found the publisher. I always liked to write, and the publisher was happy to give me my column, so I started to write. Initially, *Energia Hoy* was a small part within these company. The editor had another one that was the largest circulation magazine. It was a Sunday magazine of three newspapers.

I became a good friend of the president of the company, and eventually, he invited me to write about wine in this very important magazine. My life expanded because I went everywhere, and I got free entrance and the best wines. Eventually, one of the partners decided to start his own Sunday magazine on the back of his partner. I sat down with the President of the company, who was a minority partner, and he told me the history and over lunch and he told me, "If you don't buy it today, I'm going to close it down", so I bought *Energia Hoy*.

I didn't know anything about the publishing business, but I liked the magazine, so I bought

it. And although the price was quite low, I knew that I was going to lose money. But either way, it's a way to contribute to the sector, to the energy sector in Mexico. Since that day, we have been very, very open. We have people from left wing, right wing, people that are for renewables, people that do not believe in renewables. And I think that creates a good environment of exchange of ideas.

AR This book that you're doing for young engineers is something new again and since we need to attract a lot of young people because to the industry. I imagine it will help in your own production facilities, getting good quality engineers and keeping them, which is important, right?

SB Yes, and it's becoming a greater challenge because of the pandemic it was a problem, especially for students. They did not work in any labs, and they did not get out to see substations or machines working. They will need a lot of help to recover, to become good engineers.

AR The biggest issue that we're dealing with right now in the power industry, obviously, is change. In the United States, a lot of government money is supporting the growth of renewables, but we have an election this year and the next government may not be green energy based. When the government funds something and then it pulls back, it creates chaos in the industry because people invest billions of dollars in the future. Without consistent policies, companies have a hard time planning. Is it the same in Mexico?

SB It's the same in Mexico. But I think that the problem is polarization. It's not that you can live without oil. We still need oil, but you need more renewables. But if you take these positions that oil is killing us, when everyone is driving a car and flying on an airplane, I think that doesn't create a long-term planning scenario. You have these swings that you are mentioning, depending on who's the president, on who sets the policy. I read a nice article about gothic cathedrals. It takes 200 years to build one. The renewable world is not going to be in the next 30 years or 40 years. It will take longer than that. I think that's a good analogy.

AR The one in Barcelona started in the 1600s, and I believe it is supposed to be finished next year. That's a great way of looking at it. That's generational thinking.

SB Yes, that's why we need to change the whole matrix of energy.

AR Tell me about “Greentology”.

SB Most of the group in publishing are youngsters, so they are very much into these ideas of a green and renewable grid. Because they basically manage on their own, even though we give them ideas of course, they are excited about the subject matter.

AR What you just said about oil and renewable, that they must work together, how do you teach those young people to take a long-term approach to this?

SB What I tell them is that, unfortunately, they're not going to see the final outcome in their lifetimes. I give them examples like, one kilogram of gasoline has as much energy as 140 kilograms of lithium batteries. So how is an airplane going to fly based on lithium batteries.

If you are just doing that for money, it's a complete waste of your life. If you belong, then you learn, you listen, you find new technologies. I was chatting with one of the customers I consulted with about the book, and he said: “So you believe that when engineers get out of college they don't study anymore?” I said, sadly you are correct, for the most part.

He is a financial expert, so I said, “you continue to study because every year the government changes the tax rules and you need to study again, right?” But the electrical rules will not change. We were visiting the factory where they have a large number of motors that are 40, 45 years old. I told him respectfully that he should consider energy efficiency motors that will probably save a lot of money.

He said, “No, we tried that, and they do not work well”. I said, “When?” He said, “Well, back

Green hydrogen, a potential solution, is still a long way to go. We remember what happened to Zeppelin. That forces them to think of alternatives because I don't believe that it's going to happen overnight.

AR Let's talk about IEEE. I think I met you the for the first time at an IEEE event, wasn't it?

SB In New Orleans, yes.

AR Talk to me about the value of IEEE and CIGRE.

SB You must belong to IEEE and CIGRE. The first commandment in my book is for you to love your profession more than anything else in your working life. Because if you don't love your profession, you are unfortunately never going



in 1994" That gives you an idea of the problem. If you don't read magazines or periodicals that talk about how the efficiency of the motors is going up, you will live with this conclusion. But motors today are a lot more efficient. If you don't keep studying and getting new inputs about what is changing you do not change.

AR Lifelong learning is the key to a successful engineering career. Santiago, you are a manufacturer, a publisher, an author and a wine expert. What's next?

SB We also have a company called Instituto EH., where we train people in energy, mostly in electricity. Of course, I love teaching, and I think that's a good way for retirement, to keep on teaching and being close to people so you can pass all this knowledge that we have accumulated over the years. I don't see myself retired, but I don't see working at 88

from 8:00 to 6:00. I will be more than happy to be teaching and sharing knowledge and experience with the people.

AR Have you done a good job with succession in each of your businesses?

SB Yes, with my son. There is a saying in Spanish "El pan ajeno hace al hijo bueno". That means, "the bread of the other table makes your son good". He has his own business, but now he's helping me out, and we're planning the succession. But I think that is very important, that it's not always in parent's company.

AR Santiago, I always love interviewing you. You're my renaissance man of the power industry. Thank you so much.

SB Thank you, Alan.



The first commandment is for you to love your profession more than anything else in your working life. Because if you don't love your profession, you are unfortunately never going to be happy. If you are just doing that for money, it's a complete waste of your life. If you belong, then you learn, you listen, you find new technologies.