



## Enabling the Design, Build and Operation of Biological Conversion Plants



**Dr. Alan Rozich - CEO**

BioConversion Solutions, LLC (BCS), formerly PMC BioTec, enables our customers to design, build, and operate the world's most profitable biological conversion plants to produce renewable energy and other value-added products including fertilizer and clean water.

**Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine**

**CEOCFO: Dr. Rozich, what was the concept when you started BioConversion Solutions and where are you so far?**

**Dr. Rozich:** The concept of the company was to take technology that was initially developed for processing hazardous organic byproducts in the chemical, petrochemical and pharmaceutical businesses to prevent those businesses from having to pay high fees for disposing of materials. What we found with biological processes that are effectively and strategically integrated with processes that help to encourage the biomass to self-digest, we can have these systems installed that can achieve very high destruction of organic waste streams with no residual production. That was the initial start of the business. As things progressed into the early 2000s, we saw that there was a need for renewable energy and other byproducts and we were able to modify the process to get high conversion of each stock into methane gas, fertilizer product and water – a triple return for one renewable feedstock. That is where we currently are right now in the process of deploying that second generation of technology.

**CEOCFO: What do you understand with your technology that perhaps others do not?**

**Dr. Rozich:** We came out of the old environmental space. In that space, the production of sludge from any type of biological process or other process was seen as an inevitability, whereas we have put in so many systems that make zero to little amounts of sludge that we have seen that work. I think it is the general perception that that is not feasible. Particularly when you look at the renewable space, you can take seeing a feedstock go from 50 percent conversion as is the case with conventional anaerobic digestion to over 90 percent. That has a huge impact on the economic metrics of a product. There is a conceptual leap, and then there is a leap of trying to assimilate that from a financial standpoint. I think you have to see those two things together to believe it and we can do that. I think those two items are the main obstacle.

**CEOCFO: Who is using your systems today either specifically or generically?**

**Dr. Rozich:** For the most part, the generation one systems were installed at chemical, pharmaceutical, and food processing installations. Some of those go back to 1995, so it was big pharmaceutical companies and chemical producers that have byproducts that are difficult to take care of. We see a great deal of activity with generation two and food processors as well as in municipal sludge producers. What we see for generation two is more on the aspect of where resource rates or utility rates are highest. We are seeing a lot of activity interest in Asia, for example.

**CEOCFO: Tell us a little bit about the industry in general as it stands today. There seems to be an ebb and flow of interest in biomass, conversion and renewables. Where are we now?**

**Dr. Rozich:** I would say that interestingly I have just come out with a book called "Other Inconvenient Truths Beyond Global Warming." As part of that, I really had to look into what makes up a renewable and what makes a renewable project profitable or have it make economic sense. Basically, it occurs where old economy resources become more expensive and more out of reach. Anywhere where energy costs are high, or for example, in the agriculture area, resources like phosphorous which is key for making fertilizers, is going to continue to get higher and higher, driving up those costs. You can replace that with a renewable out of a biomass project. Those types of trends are there, and ultimately, the economics are going to prevail and push things toward renewables. I base much of this on the work of the McKinsey Group, which has been talking about this unprecedented nexus that is going to occur where three billion people in Asia suddenly enter the middle class market and drive up demand and cost for resources. There is going to be a domino effect reverberating throughout the economy, which is going to push things toward renewables.

**CEOCFO: *How do you reach potential customers?***

**Dr. Rozich:** Let me just say where we came from, which was in the industrial consultative solution area with technologies. You had a relatively defined entity that would be a user of technology. Now, without trying to sound smart, the renewable space can really be viewed as a Wild West show. That is what would probably make investors nervous because it is almost as if it is just starting to gain structure. The way we reach out is through websites, marketing pieces and papers. Much of it has been through a network that we developed over the years in doing the generation one technology. We would get food producers or municipalities that would be interested through that network. Now we are trying to add structure to that and more reaching out while also using the book that I came out with to help raise awareness as to what can be done to enhance profitability using renewables.

**CEOCFO: *When you are speaking with a prospective client, do they understand the difference easily as to what you can do compared to others? Is there an “Ah-ha” moment or a tipping point when they realize they need to go with BioConversion?***

**Dr. Rozich:** The first and foremost thing we do with a client before we try to convince the client that we are right for them is to convince ourselves that we are right for the client. What I mean by that, is, that before we sit down and even try to get them to an “Ah-ha” moment, we want to make sure the project is going to be economical for them with their metrics – without having to use subsidies or things like that. That is generally our first step. Then what we will do is walk them through what this means to them. After that, we show them generation one or generation two plans under construction and then we endeavor to go through whatever proof points they need to feel more comfortable. We have generation two plants that are underway and we can take interested people to those sites as a proof point to move along. We used that very similar process when we had the first systems out.

**“The one message I want to leave is the fact that there are challenges out there, but the good thing is that we have the wherewithal and the tools to implement solutions. It is all in our grasp. Even though it can look a little bleak at time, keep at it and we will get to the brighter side of things by just staying the course and allowing renewables to take on more life. This is a solvable situation.” - Dr. Alan Rozich**

**CEOCFO: *Would you tell us about your involvement with the installation in Australia. Is that representative of how you would work on a project?***

**Dr. Rozich:** Yes. That was another situation where people who were involved with trying to get that project going found us on the internet. They knew about our work with total recycle systems or systems that attempt to recycle everything in total. That is how we got involved. It was an opportunity that came to us because of previous work that we had done on biological systems. The carbon tax came along, and that is how this opportunity came to fruition.

**CEOCFO: *Would you tell us a little bit more about your book and how people are finding it?***

**Dr. Rozich:** We are working on a couple levels there. I decided to do online publishing because of the desire for speed to marketplace. We also have a website at [www.otherinconvenienttruths.com](http://www.otherinconvenienttruths.com), and we have been doing various marketing efforts to get the word out. We have a multiple-level approach there and we are trying to use the book not as necessarily for sales but to help inform people so they understand the entire renewable and sustainable space. It is so confused and that was one of the reasons for writing it – to help explain things and try to put it into more clear terms. Every industry has tended to overuse jargon and we try to de-jargonize the discussion.

**CEOCFO: *When you have done an installation, do you have an ongoing relationship with the project? What happens a year or two after? Are you still involved?***

**Dr. Rozich:** With the generation one systems, there tended to be some periodic consultation, but there was not any formal contractual long-term arrangement. I am not sure what is really expected long term with this next phase. I would suggest that because I believe many of the implementers are going to be actually project companies. I can see us having more of a role going further down the road with the developing renewal projects. We are comfortable either way, but usually what we have seen in the past is that if we stay out of the loop too long, then by the time they call us there are things going on that we did not know about and it is problematic. With the generation two systems, renewable projects are supposed to be moneymakers. That is a little different than when you are trying to put out an environmental compliance flier and you are looked at more like overhead than as part of the front-line troops making the revenue that is driving the corporation.

**CEOCFO: *How do you deal with frustration in understanding and knowing what can be done and waiting for the world to come around?***

**Dr. Rozich:** We went through a similar type of curve on the first generation technology. You tend to run into a wall there because you are primarily compliance driven. On this version, which is more renewable-oriented and resource-production-

oriented, you have a problem of being “new”, although all the parts are commercially available. You have more opportunity, and by pinning down the economics, you know where the targets are. Then it is how to get access to the targets. When I say targets, I mean they have high-energy costs, sludge disposal issues and a need for fertilizer. There are also other factors like energy resource and security. When you look at it that way, more on the production side, you can actually help to grow the front end of the business. As frustrating as it gets, just the knowledge that there are all those trees in the forest helps to take some of the sting out.

**CEOCFO: *What is the plan for the next year or so?***

**Dr. Rozich:** In the next year or so, we have a couple of key projects. We have one in Australia and we have a very large one that is coming up online in Korea as well as a couple others in the US. Our plan now is to put in place a more aggressive marketing program. It simultaneously talks about our company, what it can do, and talks about the book as a way to legitimize what the approaches are to validate what we are saying in terms of our expertise. I would say the next six months to twelve months are that two-pronged approach. We can then reach out to drivers in the economy and make them aware of what is possible. I believe that is much of it right now. If you do not know a certain tool exists, you cannot figure out how to use it to start with.

**CEOCFO: *Put it together for our readers. Why is BioConversion Solutions an exceptional company?***

**Dr. Rozich:** I think there are a couple factors. One is that we have so many experiences with biological systems, particularly with how to make them effective in getting high conversion of feedstock, and the technology itself takes a different, proven tact, that of processing a feedstock and getting high conversion. We have that, and then we have proprietary ways and means we use. People talk about intellectual property, but we have maybe 100 years of IK – institutional knowledge. Our team is four or five of us that have all worked together for 20 years on a number of projects. That whole package, when you look at it altogether, makes it very unique and a very compelling set of strengths.

**CEOCFO: *Final thoughts?***

**Dr. Rozich:** I was on a radio interview last week and I had another interview that I was filling out over the weekend. I just want to say that as much frustration as there is to people who are providing renewable solutions, there is a great deal of frustration to people around the globe. We are seeing a lot more of this with people who want to see more change, and worried about the future of the earth and with what we have with the various challenges. The one message I want to leave is the fact that there are challenges out there, but the good thing is that we have the wherewithal and the tools to implement solutions. It is all in our grasp. Even though it can look a little bleak at time, keep at it and we will get to the brighter side of things by just staying the course and allowing renewables to take on more life. This is a solvable situation.

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**BIO:** Dr. Alan Rozich is the founder of BioConversion Solutions, LLC (BCS), formerly, PMC BioTec. Rozich is a world-renowned expert on biological processes with over 30 years of experience in biological treatment and conversion, and author of two books. Rozich is internationally recognized for his expertise in biological process technology and has contributed over 80 articles and presentations on the topic. Rozich is a former principal of ERM, Inc. He was also an assistant professor at the University of Delaware and a wastewater engineer for the Columbus Ohio Public Works Department.

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