

NEWSMAKER INTERVIEW: THOMAS CASTEN

Thomas Casten is the founder and former CEO of Trigen Energy, a company whose mission is to produce electricity, heat and power with one-half the fossil fuel and one-half the pollution of conventional generation. Trigen, the leading thermal sciences company in North America serves more than 1,500 customers with energy produced at 47 plants in 32 locations in 18 states. From 1980 to 1986, Mr. Casten was CEO of Trigen's predecessor company, Cogeneration Development Corp. Prior to that, he spent eleven years with Cummins Engine Company where he established a business unit to combine heat and power (CHP) generation using diesel engine technology.

Mr. Casten has also written numerous reports and articles on cogeneration and district heating, and authored a book, *Turning Off the Heat*, that analyzes policy issues concerning energy costs, pollution control, and climate change mitigation. Mr. Casten currently is the founder, chairman, and CEO of Private Power LLC, a privately held company located in Oak Brook, Ill., whose focus is to build, own and operate power plants that are based on recyclable energy. To learn more about Mr. Casten and his views on distributed power, *DG Insight* recently spoke to him.

DGI: Why don't you start by telling me how you got involved in the energy industry?

TC: I started as the director of corporate strategy for Cummins Engine Company in Columbus, Indiana. I spent a year there assessing the 25 year future of the energy industry and looking at a whole series of worrying trends like overpopulation, industrialization, and pollution. Cummins was really trying to understand where a company like themselves should be positioned. From that, I concluded that most of the man-made pollution issues could be resolved with better technology. Reducing

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carbon dioxide is not so much a matter of improving combustion, its about improving fuel efficiency. In 1975, the average engine was only about 33 percent efficient. I just assumed that utilities were more efficient than that but they weren't. So in 1977, Cummins agreed to set up a new division called Cummins Cogeneration Company. I was the vice president and general manager of that company, and we started building independent power plants. But then Cummins decided it wasn't comfortable in retail, and I was feeling like I needed to use other technologies besides Cummins engines, so the division was bought out and added to an independent power company called the Cogeneration Development Corp. This happened in 1986. Soon after, we were approached by a company called Tractebel, who we partnered with and morphed into Trigen Energy. Trigen went public in 1994 and did contracts with Coors, Boeing, General Motors, and Kodak, just to name a few. Basically, we would buy the energy from these companies, process it, and sell it back them at a greater efficiency. Now, years later, we know that everybody we worked with has reduced energy use by 20 percent. So that had a terrific run. Then Tractebel bought us out and I opened Private Power.

DGI: What exactly does Private Power do?

TC: We focus on three different sources for power that are often times thrown away; fugitive gases, exhaust and pressure drops. We find these sources and we take what is being thrown away and use it to produce energy. This happens very close to the end user, with no net fuel, no net carbon dioxide release, no pollution. We actually reduce pollution because we are taking fuel that is already being burned, burning it a little better and displacing it in other areas. In a couple of cases so far we've even been certified as if we were building a pollution control device. So that's kind of fun.

DGI: What are some of your current projects?

TC: Currently, we are under contract to generate 60 megawatts of power from carbon black tail gas. Carbon black is made for tires and it produces a tail gas of hydrogen and carbon dioxide that is typically flared. We are going to burn that tail gas and use it to produce 60 megawatts of fuel-free, pollution-free power. We are also pursuing two or three developments with major pipelines to recover the exhaust heat from compressors and turn that into electricity, were working with our strategic partner, ERM, to recover the heat and steam off of a fugitive gas that they are currently incinerating for environmental reasons, so there are several big projects coming up.

DGI: I see that you are also in the process of submitting a paper to congress pertaining to a 2002 energy bill. What can you tell me about that?

TC: The paper we are doing is in reference to Senate Bill S17, a bill that would require every private utility that sells above a certain amount of power to reorganize in order to buy at least 10 percent of the power that they produce with fossil fuels from a renewable source. The bill as it stands has a circuit breaker cap of 3 cents per kilowatt hour. If a power company can't get renewable energy for less than that, it can pay 3 cents per kilowatt hour to the Department of Energy to be used for more research on renewable energy. We think recycled energy should be included in that bill. It has all the benefits of renewable energy and, more importantly,

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economic advantages.

Because recycled energy is produced very close to the point of use, it avoids using transmission. We've looked at transmission costs and we think there is a vast mistake that goes on looking at power because distributed power prices are being compared with centralized power prices without considering that with centralized power you've got to build a transmission line and transformers and a distribution line and move that power from where it was generated, sometimes hundreds of miles, to the end user. Typically, 9 percent of the power is lost along the way. So, all else aside, distributed power saves that 9 percent. But most people don't look at it that way. Whether your looking at Department of Energy studies on what new transmission costs, or wholesale energy prices in the U.S., either way its about 3 to 3 ½ cents per kilowatthour. With distributed power, that cost can be avoided and the cost of power actually goes down.

So what we are trying to show them is that by adding recyclable energy to the definition in the bill, they can have their cake and eat it too. We've used a firm database to estimate that if we add recyclable power to the bill another 50,000 MW of power could come forward, not including wind energy, solar photovoltaics, or other technologies that are coming along. Recycling alone will amount to a 9 to 13 percent reduction in energy usage, which is all the bill is asking for. What's not to like? The objective of the bill is not aimed at a specific technology but at all the technologies which would lower our use of fuel, pollution and CO2. Distributed power can do all of those things, particularly when it's done by recycling waste. I guess I'm just not smart enough to figure out why this country has its citizen sorting out milk bottles and detergent and cans for recycling when we throw so much energy away.

DGI: How did you become involved with the bill?

TC: I became aware that Congress is really starved for people who will talk

very straight and very honestly about what really happens in the energy industry. Most people who come to Congress are simply lobbying for their specific interest. So, I can provide an important service as a citizen just by sharing with the people within congress what I know after 25 years of developing independent power. Its rewarding and occasionally it helps the company, which is good but more importantly it helps Congress. They make a lot of less then good policy decisions because they don't get good information, they don't know what's really happening. So we just took it upon ourselves and became involved. Granted, including recyclables benefits us, but it would also benefit the country. I believe it is good policy.

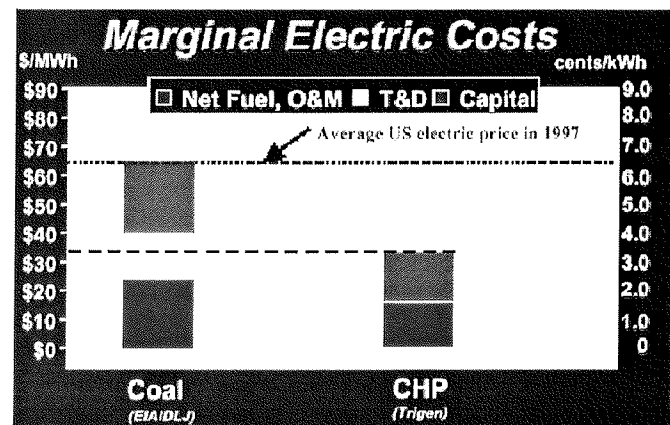
DGI: What barriers have you faced implementing these projects? How can they be solved?

TC: Barriers exist at many different levels. But many have to do with legislation. Every project that I have ever developed and most projects we've ever looked at dealt with a lot of barriers. We've spent an inordinate amount of time trying to figure out how to work around them. For the carbon black project, for example, these plants are in Louisiana which has an old law that says no third party can sell power to anybody but the utility. When deregulation occurred, they agreed to allow power from third parties to be sold to the grid, but that power can not be sold directly to the host. So the host has to own part of the plant to get around that. It creates an eye of the needle scenario. Not many people can get the thread through the needle.

With Kodak, we couldn't buy the Kodak power generating assets because, at that time, the State of New

York said that anybody that provided a utility service had to pay a 5% gross receipts tax. Then the City of Rochester charged an additional 3% when Kodak could make the power themselves without either of these taxes. In the end, we came up with a solution where we didn't own the generation, but acted as Kodak's agent. We made the technical decisions, operated everything, hired the labor. It walked like a duck and talked like a duck, but wasn't quite a duck. And it cost us a half million dollars in legal fees. But the end result is that Kodak has dropped its usage and solved severe pollution problems.

As far as a solution, I've spent a ton of time trying to figure that out. The biggest thing is to educate people in every state that you don't have to have a new transmission line in your backyard. You don't have to burn more coal and put out more exhaust. There are other ways to do it. Once people understand, legislation will kick in and many of the barriers will begin to be broken down. But it's much easier to make new laws then it is to get rid of the old ones. Legislation is like an old tree. It's got some branches that are budded out and nice and it's got a whole bunch of dead branches underneath them. They just need to go in with the pruning sheers and pull out all the dead wood. It's the dead wood that keeping intelligent power from burning.



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