

# Solar Rain Water— An Investment in Our Health and Our Future A Conversation with BJ Kjaer

by Sydney L. Murray

*People need a "fundamental, cultural attitude change about water supply in the Southwest. It's not abundant, it's not reliable, it's not going to always be there."*

*—Patricia Mulroy, Water Research Foundation.*

Growing up in Colorado, I was aware of the huge amounts of snowfall I was used to as a kid and what we see there today. Taking the road into Breckenridge, the snow fences would be covered over. Many years ago they were removed because the snow was never that high again. A few years ago I heard the phrase that water is the next oil.

According to Nature Magazine (2010), about 80 percent of the world's population (5.6 billion in 2011) lives in areas with threats to water security. The water security is a shared threat to both humans as well as our natural habitat, and it is pandemic.



Despite its water problems, California projects that its population will grow from 35 million today to 60 million by 2050. Arizona, New Mexico, and many other water-stressed states are expecting similar growth spurts as more immigrants and native-born Americans move to those states.

Last year I had the opportunity to meet BJ Kjaer who has such a strong heart and will to bring an amazing product called Solar Rain Water to restaurants and health food stores. He uses ocean water to create this amazing product. I truly believe the technology he has developed could have a worldwide impact. Recently I had the chance to discuss Solar Rain with him.

**Vision Magazine:** The research on the Colorado River and its depletion is not very encouraging. There is a professor from Columbia University that was projecting that the Southwest would become a dustbowl by 2050, based upon current projections. How does the technology of SolarRain offer consumers a product if we encounter that level of water scarcity?

**BJ Kjaer:** Realistically, the water really should flow the other way. The water should flow, in my opinion, from California to Arizona. We have more water out here than they have there. We have the ocean. Ninety-seven percent of water on the planet is ocean water.

From what I read, too, there isn't going to be much Colorado River. Obviously it depends on the climate. But I'm thinking, here goes the Colorado River, it goes into Lake Mead and just sits there, and twice the amount of water that San Diego uses in a year evaporates out of Lake Mead every year. And then, of course, it goes to Vegas. I was touring a water reclamation plant up in Cardiff, and the director was taking me through the four stages they go through before they actually use the water. If they have excess, they dump it in the ocean. After the second stage, this is where in Las Vegas stops; they don't go through the four stages that they do here. They only go through two stages of cleaning the sewage, and then they dump it back into the Colorado River. So what

happens in Vegas doesn't stay in Vegas—you're drinking it.



**VM:** Can you give a brief overview of the process of the rain water?

**BK:** The process is as old as the beginning of time because we're pretty much just mimicking what happens with what the natural water cycle is. When you think of it, the water we have on the planet is the same water that we've always had.

What we're doing is we're taking ocean water, which is what happens here. I'm looking out the windows right now and there are clouds out there, and water evaporates at any temperature that's above freezing, so it's just a matter of how fast, depending on the temperature. So oceans are not boiling to make clouds; they are just warm and they make clouds and they form clouds. And then they blow in on land and they cool down. They hit the mountains, they cool down, and they become rain.

And we do the same thing. We're using the sun, which is what nature does. We use solar-thermal energy to heat the water. We do it at low temperatures, much like what happens in nature. We make these hot-warm vapors (clouds) and then we blow these clouds into another chamber where we cool them down. And then that makes the rain. You can hear the rain falling in this tank.

Other people take tap water, first of all, which is nasty and depleting the aquifers. And then they boil it (they bring it to 212 degrees) using fossil fuels—polluting the environment—to make steam. They cool the steam down using things like Freon, which is a nasty chemical, and then they basically have distilled water. Then they add minerals or electrolytes to it to give it some flavor.

Because we make our clouds at lower temperatures, it maintains some of the minerals from the ocean, and the minerals in ocean water are in the same proportion, pretty much, as the minerals in your blood, your lymph system, your body. We're 60 percent water. So the body recognizes the proportion of these minerals and can actually use them the way they come in our water.

**VM:** Have you heard about any positive experiences with people that started drinking the Rain Water?

**BK:** I have to say, you have to be really, really careful making any kind of statement. So I have [success stories], but they're obviously anecdotal stories. I had one customer say, I had to get up a couple times a night because I was feeling very thirsty. After I started drinking SolarRain—I would drink a glass of SolarRain water before I went to bed—I wouldn't have to get up in the middle of the night because I didn't feel thirsty anymore.

A lot of chefs really love our water—local chefs, star chefs around town. We're doing better and better with some of the high-end restaurants because the chefs just love the water. Like Paul McCabe who was in L'Auberge who is now part-owner of Delicias in Rancho Santa Fe; he swears by our water. And Jim Phillips who is the executive chef of 10 restaurants in Barona [Resort & Casino], he swears by it. He and his wife both, that's the only water they drink. And chef Carl that does the Market Restaurant on Villa de la Valle in Del Mar, they go through, I think, six cases of 1-liters a week.



**VM:** I've seen the pictures of the evacuated solar tubes on your Web site. Is that what fuels your whole plant?

**BK:** When you take one energy source and you convert it to another energy source, like when you take solar panels and convert it into electricity, you lose a lot of the efficiency. So we're not converting our energy into anything. We're basically making hot water and we're using that hot water to heat our ocean water. So we're not spinning a turbine; we could but we're not. There are people that have solar-thermal power plants, and what they do is they make steam. And then they spin turbines using the steam for electricity.

We don't do that. We have these custom-built, titanium heat exchangers. The ocean water goes in one side of the heat exchanger, and the hot water from the solar-thermal field comes in the other side. And the two waters don't touch each other, but the hot water from the solar field heats up the ocean water; they touch these titanium plates, and that heats it up.

This solar-thermal energy, if you use it that way, it's way more efficient than any other kind of solar energy. Also I should say that, for instance, photovoltaic panels, they have a lot of toxic materials in them. What's going to happen in 30 years when all these solar panels go bad and they're not efficient anymore? They're going to dump them in the landfill. With our evacuative solar tubes that we use, it's glass and copper, so it's all recyclable.

Also, because a solar panel is flat, the sun is only going to hit that panel at one point of the day to be most efficient. Whereas our tubes are round, so the sun is always hitting it as it moves across the sky at a 90-degree angle. It has what's called passive tracking.

**VM:** If there was one, what do you think is the most pressing environmental issue we face in the United States?

**BK:** We're doing an event at Liberty Station, coming up, I think it's next weekend. We're providing water for people attending the fair. They said, we don't know how to deal with the recycling. I said, well, we'll take care of it, we'll recycle. They said, what about all the other stuff? People may bring in glass bottles and paper cups. I said, well we can do it. Are you going to have it separated out like a good European? [They said,] oh no, we're not that good; it's all going to be mixed together.

But if you go to any small town in Europe, they have recycling bins with everything, whether it's batteries or lightbulbs, iron or copper or aluminum, or glass and plastic, and different colored glass. People are just trained to recycle this stuff, and they're much less wasteful. I grew up in Europe, so when I first came here I was amazed. I'd walk into a grocery store and they would give you plastic bags and they would bag it for you. In Europe, you bring your own bag, and you bag it yourself. And it's always been that way. When you go in [a grocery store], you bring in your case of bottles, sorted by color, and there's a little hole in the wall and there's a conveyer belt. You just stick the box in this hole, and the conveyer belt grabs it, it scans it and knows exactly what it is, and it spits out a little receipt. When you get to the checkout line, you give them the receipt, and they give you credit for the bottles that you recycled.

Anyway, back to your question. That's a tough one. There's just so much waste.



**VM:** I've been told that sometimes recyclables all go in one bin and then might just go into the trash if they can't separate it. And you think, I make the efforts...

**BK:** It's the same as, I think, being an organic farmer. We do a lot of composting. Composting makes such wonderful soil, and the trees just love it. A lot of Americans have yards, unlike Europeans that hardly ever have yards; we live in apartments. But Americans have yards, and all the yard trimmings and the grass clippings and the rose trimmings, and whatever else they do... A lot of people don't grow their own food. They should really grow at least some of their own food.

**VM:** I definitely see more people trying in San Diego.

**BK:** People are trying, I agree, but what do they do? They throw the trimmings in the garbage or they bundle them up and stick them out on the side of the street. People should have compost piles in backyards. Now somebody has to come pick it up, burn diesel fuel to move it somewhere else and deal with it.

And I don't know about the one thing—that's tough. I have to say this: People always talk about global warming, because of the pollution and stuff like that. I'm thinking, how about breathing some clean air and drinking some clean water? Global warming is one thing, and it's not going to affect us in our lifetime, but I'd certainly like to breathe clean air, drink clean water.

**VM:** What do you see in the next year for Solar Rain?

**BK:** I see steady growth. As people start to realize what we're doing, there will be more and more support behind our product, and not just because of what we're doing and how we're doing it, but also because it's creating a superior product. It's not full of crap, literally. I think people want to be healthy.

I have to say with the economy having been tough, the last three and a half years especially, people are shopping price and there's a lot of people that shy away from our water because it is more expensive. So what I'd like to see is for us to produce more, so we can get our cost down and also so we can get it out to more people.

**VM:** I know that you have such amazing biodegradable plastic that you searched high and far for. Are you ever going to go to a larger delivery format?

**BK:** Definitely. I think it's just a matter of time and a matter of, put your stakes in capital. It's a whole other business. You've got to have delivery trucks and people that can do it.

In regard with being biodegradable or not biodegradable, I'd rather not be using any fossil fuels, because obviously there are fossil fuels that make plastic. I have to say, I still love the whole glass idea. When we first started, I said, we've got to put this water in glass, it deserves it. But you have to melt sand at 2,650 degrees to make glass. You burn a lot of fossil fuels doing it, and you pollute the environment doing it. And then the only place you can economically feasibly do it is in China, and then you've got to get China to be local and sustainable and green. So the whole thing just didn't make any sense.

I'm hoping that we can at some point do enough volume so that we can maybe do a US-manufactured glass bottle that can be reused. We can't do it at the facility where we're at right now, but hopefully we can grow enough in the next year or two where we can get a bigger facility and where we have space to do a reusable glass bottle like they do in Europe. You're still going to take water and energy, but you could use solar, and you could use our water—sea water, ocean water—to clean the bottles.

*For more information on Solar Rain Water, please visit their Web site, [www.solarrainwatery.com](http://www.solarrainwatery.com). (To view a list of retail locations that sell SolarRain, click on "where to find us.") Contact them at [info@solarrainwatery.com](mailto:info@solarrainwatery.com) and 760.751.8867.*