Quotes and Comments on Bob's Role in Alterntive Energy and Environmental Technology

Some things are better said by other people

Excerpts of Comments and Quotes about Bob Danziger's Energy and Environmental Work

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Bob Danziger is a visionary. His willingness to take financial, personal and political risks to develop cleaner better energy technologies resulted in redefining 'best' in best available technology. Without Bob's commitment to our ecological future we would clearly have a less healthy environment.

—Hon. Leon G. Billings, Maryland House of Delegates, Chief of Staff to Senate Majority Leader Ed Muskie and principal author of the Clean Air Act (which passed unanimously), and the Clean Water Act. *Link to New York Times Obituary*

Breathing Out

Sometimes it's the little stories that are most fun. They can tell us more about

ourselves, and how we operate as a culture, than the big stories. This little story begins down in Vernon, the belly of the industrial beast in L.A. If it's big and ugly, it probably gets made in Vernon. As the saying goes, Vernon may not be hell; it just smells like it.

Smack in the middle of Vernon sits a little company known as Sunlaw Energy Corp. In 1995, Sunlaw did a remarkable thing. It built a new generating plant for electricity at the corner of Downey and Fruitland.

Nothing so remarkable about that except this plant probably spews fewer pollutants than any other fossil-fuel plant in the world. In fact, "spews" is the wrong word to use with the Sunlaw plant. On a moderately smoggy day in L.A., the emissions coming out of its stack are cleaner than the air surrounding it.

Or to put it another way, the plant is five times cleaner than required by the South Coast Air Quality Management District. It's more than twice as clean as its nearest rival and many times cleaner than most plants.

Sunlaw was created by a man named Robert Danziger. As an industrialist, he is hard to classify. He's had previous lives as a jazz musician and scientist at the Jet Propulsion Laboratory. He is a large man, very large, and when standard golf clubs didn't fit him he designed his own. The living room of his house has been converted to a sound studio.

After World War II, this city was full of entrepreneurs like Danziger, men who habitually poked into the margins of things, making and sometimes losing several fortunes in their lives. Now, most of them are gone.

But Danziger remains. . . . Ronald Reagan himself could not have dreamed up a better example of capitalism at work. No public monies had been spent. The air gets cleaner, toxics get reduced and jobs get created.

—Robert A. Jones, Columnist, Los Angeles Times, (February 1997)

Bob was a one-man think tank for GE in the 1980s.

—Lorraine Bolsinger, General Electric: (President and CEO of GE Distributed Power, and previously GE Aviation Systems, and Vice-President of GE Ecomagination)

Bob, good to see that you are still going strong. I was particularly proud to be part of the start of Sunlaw, with Michael and I taking care of the insurance for you. The product that we provided was ground breaking in its day and is still sold through us, to protect the lenders.

—Mark Aspinall; Managing Director; C.J. Coleman & Company Limited (2011)

I've recently renewed a working relationship with Bob that began in 1978 when JPL was helping lead the early U.S. efforts to develop renewable energy and hybrid vehicles, hoping to solicit his help in defining meaningful roles for JPL in the alternative energy arena. His insights, broad background, and real world experience and perspective have proven even more valuable than I had hoped. And his grasp of both the big and the small—global and local—perspectives was amply evidenced at the labwide JPL seminar he gave here recently.

—Bob Easter, Manager, Program Development Studies, JPL (2009)

I met Bob through a mutual friend, who thought Bob's and my shared interest in

environmental science might lead to some interesting chemistry. Well it was like alchemy with our meeting leading to a collaboration, friendship and golden moments and golden accomplishments. Bob's knowledge and grasp of environmental issues led to me to ask him to give a guest lecture in my class in marine pollution. And his interest in the class, the students and the subject resulted in his semester-long participation and an incredible experience for the undergraduate, graduate and post-doctoral students taking the course. Indeed, this led to his being recruited as a co-instructor with me when the course was offered the next year.

What Bob brings to the table is intensity, commitment and creativity. Intensity and commitment were clear in his quick mastery of the regulatory issues on the government side, with Bob easily digesting an immense literature on the legislative, advisory and political side of marine pollution issues. This combined with his knowledge and experience on the business side of these issues provided a wealth of experience to the class.

Creativity is the other important side of interacting with Bob. I recount one example that has been extremely important in my research and teaching. It was Bob's reframing of my research area. This area is on a cellular mechanism for keeping pollutants out of cells. My fellow scientists refer to these as efflux transporters, as molecular motors that act to pump pollutants out of cells. Bob reframed the way the entire field now talks about this mechanism. What Bob called them was "bouncers." And this is now how all my colleagues refer to them. It is a brilliant metaphor, easy for the listener to understand that these are indeed bouncers, but instead of ruffians, the bouncers are keeping toxic things out of the cells. This renaming, reframing, recasting is an important aspect of Bob's creativity. It is his quickness in understanding complex issues and then creating a simpler way of looking, understanding and solving the problem at hand.

—Dave Epel, Jane and Marshall Steel Professor of Biological and Marine Sciences, Stanford University; Professor Epel has also been a Guggenheim Fellow, and is a Fellow

of the American Association for the Advancement of Science

I just wanted to send you a heartfelt thanks on behalf of the Google.org team for your participation in yesterday's RechargeIT RFP meeting. Your insights were truly invaluable and we benefited greatly from your experience in this complex field. Our team found the exercise to be quite helpful for our final decision making process and we will share the results with you in the near future. I'm sure you have many demands on your time so we really appreciate your participation and feedback. We look forward to our next opportunity to work with you.

Warm regards,

—Kirsten and the Google.org Team (2007)

Bob is one of the great business partners imaginable. He brings tremendous intellect, creativity, and energy to every project. His word is his bond, and loyalty and trustworthiness are among his strengths. We have been through good times and turbulent seas together . . .

—Bob Hilton, Vice President, Business Development, Alstom Environmental Control Systems

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Bob Danziger is truly a person whose thinking is outside of the box. . . conversations ranged from the problem of global warming and the generation of alternative forms of energy. Bob introduced me to microbial fuel cells, a process by which electricity can be generated by a variety of different microorganisms. It was clear that Bob, whose vast experience in energy production was intrigued by the phenomenon, and he suggested that we put together a small version of one

commonly used type of fuel cell. We did using microorganism found in soil, mulch and manure. Now, here is one of Bob's thinking out of the box ideas, "Why don't we see if we can generate electricity from the non-carbon parts of coal?" I thought this to be a very odd idea, but when I read that certain species of bacteria live in coal I realized that he might be on to something. What I don't know whether he was aware of the coal-eating bacteria or was it his canny mind that led him to the idea. In brief, we were able to generate electricity from coal without combustion and went on to improve our fuel cell design to produce greater amounts power. I relate this story as only one example of the strength of Bob's thinking. One learns this within one's contact with this extraordinary person.

—Paul Levine, retired professor, Stanford, Harvard, and Washington Universities

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Apparently Hubbard's peak and Simmon's ostensibly scholarly analysis of Saudi oilfields are chimerical deceptions. Your '05 projection astounds. [Referring to speech at Stanford predicting that within three to five years the price of oil would go under $35 per barrel after having topped out over $100 per barrel. The price went up to $140 per barrel and then dropped to less than $35 in three years and eleven months.]

—Cole Lester, Attorney, July 10, 2009

Seeing you at the Air Resources Board the other day and hearing your perspective on your upcoming retirement, I felt compelled to drop you a few lines to acknowledge your contribution to cleaning up the air.

From the days of working with you while I was at the South Coast Air Quality Management District, it has been a great pleasure to see the tremendous progress that you had orchestrated through Sunlaw and the research and development being performed with the creation of Goal Line. You were always committed to

reducing emissions from stationary sources to the maximum extent possible. The demonstration you have carried out at your powerplant has surprised many people and delighted many others, myself included. The continuing advances in this technology for stationary source applications and the extension to mobile source applications provides us with great encouragement for the future. The outstanding performance of the technology operating over a long time has made believers out of skeptics to the point at which it seems that the measurement techniques have not kept pace with the ability to control the emissions. What a wonderful accomplishment!

. . . I also want you to know that you have made a major impact in advancing state-of-the-art emissions controls. Your personal commitment, perseverance, financial support and dedication to do the right thing will benefit many for years to come. Please accept my humble thanks and congratulations.

—Alan Lloyd, Chief Scientist, South Coast Air Quality Management District; Chairman, California Air Resources Board; and Secretary, California Environmental Protection Agency (2001)

I really appreciate the credit given to me and Stewart & Stevenson in your remarks to the "LM Fraternity" [The LM Fraternity is the group of people responsible for starting the alternative energy industry as we know it today]. For my thinking all of the credit goes to Bob Danziger.

—Joe Manning, CEO of Stewart & Stevenson and one of the most respected men in the history of energy

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[Re: Bob Danziger/Sunlaw position in helping start the alternative energy

business in the United States]

. . . Some pioneers genuinely believed in the new technology, saying that gas, while it emits carbon dioxide, is vastly preferable to coal. Bob Danziger, founder of Sunlaw Energy, was one of the earliest examples, but Calpine and AES' founders would speak along similar lines. This attitude, which merchant producers in the 90s still held, reflects the earlier preoccupation of politicians and society with acid rain, a phenomenon associated with the sulphur dioxide emissions of coal plants, rather than a general aversion to greenhouse gases.

Geothermal power was one of the early technologies to benefit from IPP finance, and certainly gained a stronger following than wind power in its initial stages. CalEnergy, now part of MidAmerican, Oxbow Group, founded by Bill Koch, and Unocal were the main players. Indeed Calpine's early success rested on its purchase of the Geysers property from Unocal. Bruce Wrobel, formerly of EnCom, and now, as Herakles Capital, pushing a scheme for a Bauxite project in Guinea, did handsomely from selling prospective geothermal resources.

Banks liked the assets, since most of them had the backing of contracts with strong support from regulators. Some of them, particularly the earliest ones, struck power contracts at very advantageous terms.

[Bob Danziger's] Sunlaw Cogeneration is for most the first project-financed thermal plant, a 66MW project that signed a power purchase with Southern California Edison, and was the first to avoid using a take-or-pay arrangement. It was also pitched to a financing community that had little idea what to make of a private power plant.

Bob Danziger, whose past occupations included law student, avant-garde jazz musician and researcher at the Jet Propulsion Laboratory, had even less money than Makowski to play with. He ended up having $10,000 in [worker's] compensation to work with, and owed lawyers and engineers about $2 million by

the time he closed Sunlaw's financing.

Nevertheless, after fruitless conversations regarding a leveraged lease financing, including a pitch to First Chicago, Sunlaw managed to place debt with the assistance of Bank of America's Ron Spoehel [now CFO of NASA], $60 million in all. Other debt investors included SFG and NatWest (now Royal Bank of Scotland), Lloyd's, Irving Trust and Bank of New England, while the $21.5 million equity was placed through AG Becker (sold to Merrill Lynch in 1984) and Smith Barney (now part of Citigroup). John Hancock, also an equity investor, as well as Aetna and United of Omaha, provided the takeout of the construction financing.

At the time, bankers were usually the place to find construction finance, while the institutions provided takeout finance. This delineation continued until European and Japanese banks became more willing to lend long-term. The US aversion to long-term lending is not necessarily a recent phenomenon. Where they were able to help was in understanding, and therefore trying to eliminate, construction risk. After all the contracts had been signed, and insurance procured through Lloyds, there was little left to chance.

Equity returns could be high. Sunlaw's partnership meant that the limited partners made 325% before the general partner, Danziger's Sunlaw, saw more than 1%.

—Tom Nelthorpe, Project Finance Magazine, May 2008

Bob is truly the pioneer of our current private electricity infrastructure in the United States and Australia. He has pushed for open accounting in the power generation groups and pushed for environmental awareness and accountability back when the other companies pushed against it. Bob was instrumental in making Los Angeles's air cleaner and made it a much better place to live and work

for hundreds of people. Many of those were children that needed that helping hand.

Bob can do anything he puts his mind to but more importantly, he has taken on many tasks that people say cannot be done, but he gets them done. It has always been a pleasure working for and with Bob on many projects and task over the last 20 plus years. I would recommend Bob for any project but highly recommend him for the nearly impossible project!

—Tim Smith, Vice President