Clean Energy Guru Takes On Wall Street

By Susan Arterian Chang

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For his exchange-traded fund, Robert Wilder picks companies for their clean-energy technology, not their balance sheets

PHOTO: Robert Alan Benson

Years before Wall Street bought into the idea, Robert Wilder set out to prove that investing in alternative and clean energy solutions was not just for tree huggers. Although it has experienced the price

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volatility characteristic of any emerging sector, as of 17 October the WilderHill Clean Energy Stock Index (ticker symbol ECO) had risen 99.2 percent since its launch on the American Stock Exchange on 16 August 2004. It was up, year to date, by 33.4 percent. Investors have poured more than US $1 billion into PowerShares WilderHill Clean Energy Portfolio (symbol PBW), the exchange-traded fund that holds the same stocks in the same weights as the index. (Exchange-traded funds can be traded and priced any time of the day, unlike traditional mutual funds.) The fund was named the Best Exchange Traded Fund for 2007 by the popular investment Web site The Motley Fool.

What makes Wilder's approach to stock picking unique is a disciplined focus on a company's technology. Financials are a secondary consideration. Rather than targeting undervalued companies as most other stock pickers do, Wilder chooses firms for ECO because they are applying technologies that are deemed most likely to gain value from society's transition to cleaner energy and efficiency.

You could say that Wilder has been looking for a way to link the "real" world of finance and economics with research and technology since youth. He was fascinated with electronics, lasers, and ham radios as a kid growing up in Baltimore in the 1960s and '70s. This early delight in technology lead him to study the links between public policy and scientific inquiry, or as he calls it, "the bigger picture stuff." He pursued a degree in political science at the University of California, Santa Barbara, where he confesses, "I was consciously and with great intent trying to be an okay student while motorcycling, playing soccer and lacrosse, and surfing. I was a nice Jewish boy from Baltimore living the California beach boy fantasy."

After earning a law degree from the University of San Diego in 1985, Wilder got funding to pursue graduate work through California Sea Grant and the University of California, San Diego's Scripps Institution of Oceanography at what was then the Institute of Marine Resources. Although he eventually earned a

Ph.D. in political science in 1991, he spent part of his postgraduate years studying new solutions to ocean pollution at Woods Hole Oceanographic Institution, in Massachusetts, and monitoring work being done at Scripps on the conservation of marine biodiversity

“All my published papers were in environmental science and technology and marine policy,” says Wilder. “I wasn’t interested in researching or writing about voting behavior.”

In 1993, newly married to Diana Francis, a former forest ranger from California, Wilder accepted a position at the University of Massachusetts, Dartmouth, where he taught environmental policy and was continually seeking a way to keep “one foot in academia and one foot in the real world doing applied solutions.” In 1996, he returned to the University of California, Santa Barbara, where he asked the head of the marine sciences department for some office space. “He gave it to me,” says Wilder, “and I set about just trying to figure out a way to be more ‘applied.’ ”

The opportunity came in 1999 when Wilder connected with Joshua Landess, a bright economist schooled at the University of Chicago who had created a Web site that used algorithms he had developed to produce near-live pricing of groups of alternative energy stocks. Contributing his expertise in pollution prevention technologies, Wilder collaborated with Landess on a stock index composed of companies whose “core technologies were desirably zero/low carbon.”

It was an exciting time for Wilder. “I felt I was a naturalist in the arena of science and finance,” he recalls. “The beauty was [that] there was a lot of low hanging fruit. Typically the people running environmental investment funds at that time did not look at science and technology. They looked at quarterly earnings and ended up with the big waste-cleanup companies, with big earnings in very mature, noninnovative industries. And all the energy funds

were oil, coal, or natural gas. Few of them were in solar or wind power or pollution prevention." Wilder and Landess, on the other hand, were looking for emerging companies in cutting-edge clean technologies that were plowing their earnings, if they had any, back into research and development.

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Clean Energy Guru Takes On Wall Street *Continued*

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PHOTO: Max Dolberg

The index was posted on a Web site designed by Wilder's wife and began attracting over 100 000 hits a month. E-mails flooded in from people who wanted to buy into it. "Josh had created the original index in the public interest and together we had cocreated the WilderHill Clean Energy Index," says Wilder, "to show that stocks in technologies that don't pollute could go

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up. I had to tell these people, 'go away, I am just an academic trying to make a point,' but I felt badly."

In 2003 Wilder says he "danced a jig" when PowerShares, a company that manages exchange-traded funds, approached him to create a fund that would track the clean technology sector. Wilder became CEO of WilderShares, his and Landess's new company, and they gave the rights to create an exchange-traded fund of the Clean Energy Index to PowerShares (a completely independent entity). The index is composed of six sectors (renewable energy supplies, energy storage, cleaner fuels, energy conversion, greener utilities, and power delivery and conservation). Each sector is assigned a weight in the total index according to technological relevance to clean energy. Each company is then assigned an equal weight within its sector, regardless of its market capitalization. This indexing methodology differs from traditional methods, like that used to create the Standard & Poor's 500, where sectors and companies are weighted according to their market capitalization. In the WilderHill indexes, no stock can exceed 4 percent of the total index weight regardless of the size of its market cap, and each quarter the index is rebalanced and sometimes revised. Wilder says weighting by sector importance rather than by sector capitalization makes better economic sense. For example, hydrogen-fuel-cell makers represent a much larger market capitalization than solar companies, but because Wilder believes the solar sector has a much more promising future it has a heavier weighting in the ECO index.

Unlike the typical stock analyst, Wilder rarely visits the companies he is researching. "It is too easy to get 'captured' that way," he says. If he does speak to company executives it is to the engineers not the marketing executives. Instead, he scours the science and technology journals and published research papers for bright ideas. "Many of our companies are close to the R&D phase and have an active portfolio of papers and articles on their emerging technology," he says.

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A typical ECO stock pick is Phoenix-based First Solar, which was added to the index in January 2007 because Wilder wanted a manufacturer of thin-film cadmium telluride solar modules represented in the index, in addition to silicon-crystalline panel makers. “With the current silicon shortage, crystalline solar panel costs are going up,” he explains. “But thin film cad cells use hardly any silicon, so they can sell into the bottleneck and take advantage of demand.” Over the long term, Wilder believes the efficiencies of thin-film technologies will be improved sufficiently to keep First Solar competitive even if the silicon shortage eases.

When it comes to the relative efficiencies of solar panels Wilder knows whereof he speaks. At his home office in Encinitas, Calif., he operates a veritable clean-tech laboratory, monitoring the efficiencies of a variety of solar panels and posting their performance with a live feed to his Web site. He lights his home almost entirely with LEDs and owns a Digital Light Processing TV rather than a plasma one, because the former is so much more energy efficient. His house is constructed of “breathable” clay interior walls and a white-foam flat roof that create a passive internal cooling system without artificial air-conditioning. “We try to live it, to eat our own pudding,” says Wilder. “My wife and I embrace our nerdiness and our kids go along because they have grown up that way. It is nice to have a truly working knowledge.”

Wilder is also researching hybrid technologies with his Plug-in Hybrid Electric Vehicle Project, manned by a group of young engineering students. “I am not out to compete with any big hybrid companies but just to change perceptions,” says Wilder. “ For years we have heard that plug-in hybrid technology ‘isn’t there yet,’ but that just isn’t true. We will be able to run this car for 20 miles on electricity alone (exclusively on solar if charged in the daytime) which is just fine for me because I don’t drive very far.”

In addition to authoring a book, *Listening to the Sea* (University of Pittsburgh Press, 1998), which investigates the topic of “ocean governance” and the

technologies that prevent ocean pollution, Wilder has also continued to break ground with new indexes. In early 2006, he and Landess collaborated with Michael Liebreich of London-based New Energy Finance on the first global clean energy index, WilderHill New Energy Global Innovation, composed of between 80 and 90 companies diversified across the clean energy sector and based in Europe, Asia-Pacific, and the Americas. In June 2007 the PowerShares Global Clean Energy Portfolio (PBD) was launched. It holds the same stocks in the same weights as the WilderHill New Energy Global Innovation Index.

In October 2006, Wilder and Landess, incorporated as Progressive Energy, published “The WilderHill Progressive Energy Index,” to satisfy what Wilder calls “an intellectual craving” to create an index of companies whose technologies are helping to reduce fossil-fuel-generated carbon emissions. In another first, in July 2007, the Chicago Climate Exchange (the first North American market where companies can buy and sell greenhouse-gas-emissions contracts to manage their carbon footprints) launched its first stock index futures contract on the ECO index. (Futures contracts give investors the ability to buy or sell the index at some future date at a predetermined price.)

Since the ECO index debuted, banks and other financial institutions have launched over 20 other clean energy indexes, reflecting the market’s growing interest in the sector. Nonetheless, the WilderHill indexes are likely to remain the industry benchmarks for some time to come. “I think Wilder’s approach makes sense,” says Sacha Millstone a Boulder Colo.–based investment advisor with the Millstone Evans Group who recommends the PowerShares WilderHill exchange-traded funds to her clients interested in clean technology investing. “At this stage many of these companies are overvalued from a purely financial perspective. But Wilder is looking at the best technologies and that is what will be driving the brands in this industry over the long term.”

About the Author

Susan Arterian Chang is a writer based in London who covers financial and environmental policy topics. She is the former publisher of a community newspaper in White Plains, N.Y.

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