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Financial Engineering Drives Renewable Energy Projects

The Editor interviews Edward W. Zaelke, Partner, Akin Gump Strauss Hauer & Feld LLP.

Editor: Please tell us about your background and experience.

Zaelke: I graduated from law school in 1983 with a progressive intention of becoming a renewable energy lawyer, and my goal was to focus on the private sector. There was a lot happening in the early 1980s with the development of wind farms in California and Department of Energy-backed projects elsewhere; however, due to the drop in oil prices and the change of the U.S. tax laws in the mid-eighties, these projects came to a halt.

In 1990, I teamed up with Akin Gump colleague Adam Umanoff, who was working on some of the surviving wind energy projects in California. This work continued in California and expanded to other parts of the country by the late 1990s. When the wind energy market finally began to grow again, I was one of a small handful of attorneys working in the renewable energy space. The wind industry really took off after General Electric bought Enron Wind Assets in 2002, and in the past ten years, the renewable industry – wind and solar – has been very strong.

In 2002, I joined the board of directors of the American Wind Energy Association (AWEA) and was able to participate in the industry's growth, not just as a lawyer but also as a member of a trade association involved in policymaking decisions.

Through AWEA, I became involved and invested in AWEA's educational program and frequently write and speak on the subject it covers. I served as president of AWEA in 2006-2007 and currently serve as chairman of AWEA's Conference in Education Committee. During my time on AWEA's Board, AWEA has grown in size and influence and is a very effective advocate for the industry.

Editor: Is green technology a viable direction for U.S. energy interests?

Zaelke: Green technology must play an expanding role in the U.S. energy mix. First, while certain economic interests may be at odds with efforts to control global warming, scientific evidence from respectable sources is clear. Global warming exists, and humans are causing it by our continued output of carbon dioxide and other carbon-based compounds into the atmosphere. With certainty, there will be negative consequences in the next 100 years unless we switch to green technology.

Second, the U.S. cannot continue to import a significant portion of our energy needs. We must rely more heavily on natural gas and green technologies to secure our energy future and decrease dependence on potentially hostile oil sources. There was a certain patriotic inspiration for the original decision to focus my practice on this industry – particularly after I witnessed the gasoline shortages in the mid-1970s.

Notwithstanding some setbacks, the wind industry has made great strides in the last ten years and shows promise to become a home-grown industry that is clean and commercially viable.

Editor: What are the key national and international trends in the renewable energy project field?

Zaelke: One important trend involves assessing the full cost of fuel sources – rather than simple pricing analysis versus green energy sources – including the externalities of burning carbon-based fuel. While technologies for burning coal and gas are well established and can appear cheaper than renewables, carbon-based industries enjoy an unfair advantage. For instance, they are not taxed for externalities (such as the costs everyone else has to bear due to increased particulates in the air and carbon dioxide



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emissions), and they receive enormous government subsidies that date back to the 1930s. In order to level the playing field, green technologies continue to receive national and global government subsidies and tax support to make them more cost competitive. Those subsidies need to continue until either carbon-based fuels are required to pay for their pollution costs, until carbon-based fuels stop receiving government incentives or tax benefits, or until green energy technology advances to the point where the cost is lower than the subsidized cost of energy from carbon fuels.

Currently, there is a negative view of government spending worldwide as reflected in troubled countries like Greece, Spain and Italy and in domestic perspectives held by Congress and the influential Tea Party as we approach the 2012 elections. With so much political incentive to reduce government spending, the green energy industry faces substantial challenges in continuing to grow and compete with fossil fuels.

Editor: What are the specific factors to consider when assessing economic viability for the green industry?

Zaelke: Green technologies already are economically viable, and the next step is to develop a market for wind and solar power as a commodity. Unfortunately, just as these technologies were hitting their stride in the early 2000s, skyrocketing prices of steel and fiberglass – used to manufacture windmill blades – hindered positive development. In the past five years, a combination of domestic manufacturing, cheaper component parts and technological advances have caused a dramatic drop in the cost per kilowatt hour of wind and solar power. However, since coal and natural gas continue to receive government subsidies and tax benefits, similar allowance must be made for green technologies to create a domestically based green energy economy that, ultimately, could be self-sustaining.

From a practical perspective, a utility can

more easily integrate a natural gas- or coal-fired farm; thus, it is critical for state governments to create an intermediate solution by mandating a percentage of purchases by utilities from renewables. Such a solution both allows the green industry to develop and recognizes the value of fuel diversity as a beneficial U.S. policy goal.

Editor: What are the greatest challenges in designing and implementing renewable energy projects?

Zaelke: Siting is a major challenge. Although wind and solar projects are good for the planet, they are not invisible. Some people view a wind turbine as a beautiful statement of U.S. independence and technological prowess, while others find it unattractive. Siting also requires sensitivity to environmental effects on wildlife at the locations themselves.

Transmission poses additional logistical and cost challenges due to the remote locations for these projects and the need to build infrastructure to transmit generated power to consumers. Further, the recession has slowed manufacturing, thereby reducing both the demand for electricity and the potential profits from green energy projects. Finally, inconsistent government policies, including legislation that changes every two years, make it difficult to plan projects that may take five or more years to develop. Thus, siting, transmission, effects of the recession and ephemeral government policies are the four legs of the chair on which the renewable industry must stay balanced.

Editor: Please talk about renewable energy project development and financing in your practice.

Zaelke: Since the reemergence of the wind industry in the U.S. in 1997, the technology market has moved in both directions. Critical to the success of these projects, and to industry growth as a whole, is what I call financial engineering, i.e., sitting down with investor, bank and developer clients and dissecting what makes the project work from a contractual standpoint. This includes a detailed review of the financing arrangements and all agreements and warranties with respect to equity and debt financing, land lease, power sale, interconnection, design and construction and turbine supply.

On the financing side, it is critical to determine effective financing terms – for example, whether you need set asides or reserves – and to plan for the times when the wind doesn't blow. Clients need help identifying risks, and lawyers should be focused on removing as much risk from the deal as possible, using the contractual arrangements and other tools.

For attorneys, financing solutions require creativity and deep industry knowledge. We want the firm's 35 attorneys who focus almost exclusively on the renewable space to immerse themselves in the industry, to know how a wind turbine works and to understand potential problems, environmental issues and market dynamics – all so they can be legal *and* financial engineers for these projects. These challenges are only heightened by legislative and regulatory environments, technical advances and project models that are constantly changing. The attorney's ultimate job is to lower capital costs by reducing risk, thereby reducing energy costs to the utility and creating a project that makes economic sense.

As much as the designers of new technologies, lawyers have contributed to the industry's progress from a few hundred to 10,000 megawatts per year. Green technology can be a growth industry in America that brings new manufacturing facilities and creates jobs – for example, the U.S. wind industry now employs 150,000 people in jobs that existed only in Europe 15 years ago. We have stabilized the industry via risk management and effective financial structures, creating a livelihood for U.S. workers. I am proud of Akin Gump's commitment and success in this area.

Editor: Is the industry creating American jobs?

Zaelke: The industry grew up in Europe, where they designed superior wind turbines, and then the Chinese, Koreans and others started developing and manufacturing solar panels. U.S. entry into this industry was delayed by inconsistent domestic policies and tax laws; thus, when we entered the industry ten years ago, we had to import 90 percent of our wind turbine components. Last year, only 50 percent were imported, and the key to this positive development was government support from 2002 to 2010 in creating a stable market. While the support was inconsistent, state and federal government viewed renewable energy as a strong positive in our energy mix, and companies were willing to risk opening factories. This resulted in a host of new domestic jobs.

While we have a long way to go, a stable policy for the past ten years has allowed us to develop from 90 percent imports to 50 percent domestic production, and that result should speak legions to Congress about the need for legislative action to create a federal energy policy.

Editor: Is California leading the way for industry development and job creation with Senate Bill SBX1-2?

Zaelke: It is. SBX1-2 was passed last April

and mandates a 33 percent renewable portfolio standard in California, which may require the state to spend \$30-40 billion over eight years to create the mandated renewable power projects. It was a very bold step, but one that can both pay for itself through job creation and make a positive environmental impact.

The idea behind SBX1-2 is to avoid costly tax incentives and guesswork about natural gas prices by requiring the use of renewables. A 33 percent mandate creates a market incentive for project development and healthy competition to develop efficient technologies.

Editor: Please discuss public and private financing options for renewable energy projects. Are there repercussions from the Solyndra scandal?

Zaelke: Once renewable projects are up and running, the fuel is free when the wind and sun cooperate – unlike coal and natural gas sources where the commodity price determines the ultimate power costs to the consumer. As a result, renewable projects are very capital intensive at the beginning, so great emphasis is placed on reducing the cost of capital and accurately calculating the price that will be charged to the utility.

Government loan guaranties and financing can certainly help reduce the cost of capital, as we have recently seen. Continuation of these policies would be a significant benefit to the continued growth of the domestic renewable industry. It is especially beneficial to technologies that take a long time to develop, for instance, thermal solar, which uses the sun's heat versus ultraviolet rays.

While the Solyndra bankruptcy was unfortunate, it was one of many loan guaranties that, by the way, imposed no cost on taxpayers. Most of those projects will be successful; however, there are political issues arising from Solyndra that will hinder public-funding initiatives. The industry must continually prove itself worthy of the public's trust, and we must ensure that the projects that do move forward are successful.

Editor: Are you getting involved more in private financing?

Zaelke: I haven't seen a drop in the cost of private financing, which has always been the major source of funding. While the government has been reluctant to get involved, we will be looking to get back to public financing of our deals. Public bond offerings, for example, likely can lower costs over straight private debt; however, they comprise different risk profiles versus simply seeking financing from a bank, so these public options present financial engineering challenges.