Energy Crossroads 2007:
Preparing Us for a Clean Energy Future

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You've heard it before: climate change, and the energy revolution required to solve it, will be the single greatest challenge of the 21st century.

In early March 2007, ten Stanford students made serious progress in addressing the issue. Tyler Huebner, Ahmet Kazanc, Jonas Ketterle, Brian Noguchi, Arin Pinto, Juliet Rothenberg, Miki Sofer, Alina Syunkova, Benjamin Welle, and Lyuba Wolf organized the 2007 Energy Crossroads conference, which brought together students, energy enthusiasts, and twenty-one industry experts to discuss green solutions to the energy challenge. At the crux of Energy Crossroads were three panel discussions, and a keynote by three-time Pulitzer Prize winning New York Times columnist, Thomas Friedman.

In the first panel, "Clean Energy Solutions: Setting Priorities," panelists discussed the various resources that might meet our growing energy needs in a climate-constrained world (50% of world energy demand in 2050 must be met by carbon-free resources to stabilize the climate—presently they meet 12%). The arguments for "clean coal," presented by Jeff Goodell, author of *Big Coal*, were unconvincing. Even using the most advanced coal plants, the infrastructure required to sequester captured carbon underground would increase the price of coal power 50% to 80%, making cleaner alternatives much more attractive. Burton Richter, Nobel laureate, and professor emeritus of Stanford was adamant in his defense of nuclear as a clean energy alternative, citing its ability to provide substantial, continuous power with no greenhouse gas emissions. He made a persuasive argument for the safety of nuclear, but many were unconvinced by nuclear power economics without subsidy. President of the Worldwatch Institute, Chris Flavin, presented by far the most desirable solution: a combination of energy efficiency and renewable energy. He spoke to the importance of reducing our demand for energy by using it more efficiently, then meeting the smaller demand with our rapidly growing renewables capacity. Mark Delucchi transportation expert from UC Davis had good ideas for reducing transportation emissions: hybrid-electric and fuel cell vehicles, with further increases in efficiency through the use of lightweight materials like carbon fibers for their construction.

"Making Renewables and Energy Efficiency Competitive," the second panel, focused on market strategies and governmental regulations being implemented to make clean energy solutions competitive. Jeff Byron, a commissioner from the California Energy Commission talked about California's leadership through AB-32, the Global Warming Solutions Act, which will drastically reduce our greenhouse gas emissions

over the next fifty years. Venture capitalist Ira Ehrenpreis from Technology Partners gave proof that the tech sector is also rising to the challenge: 14% of venture capital funds were invested in clean technology in 2006, up from 1% in 2000. Jonathan Livingston of Pacific Gas & Electric showcased his company's initiative to increase energy efficiency by educating consumers and providing them with efficient technologies. Through this and similar initiatives, California's per capita energy consumption has remained flat for the past 30 years, compared to a 50% increase in the U.S at large. Founder of the U.S. Green Buildings Council David Gottfried discussed the Leadership in Energy and Environmental Design (LEED) building certification system, which provides incentive for sustainable building practices by offering its coveted stamp of approval to buildings with high environmental performance.

The third panel, "Clean Technology on the International Frontier," took the issue global. The BP Alternative Energy Group, which has received $8 billion over ten years from its parent company to research and implement clean energy technologies was represented by Steve Westwell, who identified the need for national energy legislation to augment disparate local policies that make widespread implementation difficult. Vijay Vaitheeswaran, a global correspondent for The Economist, suggested that the policies to implement would be the deregulation of energy markets, and an environmentalism that embraces the use of market-based incentives. President of The Energy Foundation, Eric Heitz, spoke of China's energy efforts, including their national goals to reduce greenhouse gas emissions 10% by 2010, and provide 15% of their power from renewables by 2020. Heitz warned that they will probably not make their goals, but will make a valiant effort. Ellen Pao, a partner of Kleiner Perkins Caufield & Byers, talked about emerging technologies: cellulosic ethanol, increased efficiency solar cells, and ultracapacitors for energy storage. In closing, she emphasized that smart companies can afford to do well and do good at the same time.

In the keynote address, *Green is the New Red, White, and Blue,* Thomas Friedman stressed the importance of the issue: the transition to green energy, he said, will be the largest industrial project mankind has ever undertaken. To succeed, we will need to leverage Wall Street, bypassing politicians who like to talk the talk, but are as of yet refusing to walk the walk. Friedman emphasized the need to make the transition in an innovative and economical way that will help us become a respected world leader once again. "Why haven't we seen a Million Person March for green energy yet?" he asked, "Because those who will be most aggrieved by the consequences of climate change have not been born yet." Most of us, however, will live to see the devastating effects of our global fossil fuel addiction in our lifetimes, and we must act swiftly if we want our children and grandchildren to have a world that's clean and safe to live in.

Energy Crossroads enjoyed great success, because it began to show us how we will be able to do just that.