Testimony by Richard L. Kauffman, Chairman of the Board, Levi Strauss & Co. to the Select Committee on Energy Independence and Global Warming at hearing on "Not Going Away: America's Energy Security, Jobs and Climate Challenges"

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My name is Richard Kauffman and I am Chairman of the Board of Levi Strauss & Co., one of the world's leading branded apparel companies. We do business in over 110 countries. I have been also, until recently, the CEO of Good Energies, a leading investor in renewable energy. Between these two roles, I can give you a perspective from the private sector on some of the issues we face in climate change and in adoption of renewable energy and energy efficiency.

Levi Strauss cares deeply about energy and climate change, not just as a good corporate citizen, but also because of our business:

1. Climate change has a major effect on our supply chain—from cotton to our manufacturing facilities located in countries already feeling the effects of extreme weather. Cotton makes up more than 95 per cent of our products, and as recent weather events in Pakistan have demonstrated--cotton prices have jumped more than 50 per cent since July—consumers of agricultural commodities are at risk for crop availability, quality and pricing. Levi Strauss manufactures our products in more than 45 countries, many of which are in the developing world that are expected to bear the risks of water shortage (India and Nicaragua), disease (Cambodia), and flooding and salt water intrusion (Bangladesh and Vietnam).
2. Levi Strauss, like other American companies, is a beneficiary of globalization, not only in terms of establishing a global supply network, but also in terms of demand for our products. Our biggest growth markets are outside of the

United States, including the developing markets of China, India, Russia, and Brazil. We are American brand. We represent the best of American cultural values: honesty, integrity, hard work, and the pioneer "can do" spirit. These values speak to consumers around the world, but to the degree that other countries see the US as being resistant to the science of climate change and as wasteful of natural resources, our brand is at risk. Young people, in particular, around the world care about climate change since it will affect them more than any of us in this room.

3. For decades, we have been a corporate leader in environmental stewardship. Our customers around the world expect no less of us. We were the first global apparel company to implement strict water guidelines in 1995. We have also done lifecycle assessments of our products to identify our most significant environmental impacts and how to address them, including implementing a comprehensive cotton strategy that addresses every stage of cotton production to minimize environmental impacts, ensure decent working conditions to farm workers and support economic development of farmers and focusing on educating consumers on how to care for their clothes more responsibly, including washing less, washing in cold water, line drying, and donating clothing to keep it out of landfills.
4. We also see opportunity in addressing the challenges of energy and climate change. There are product innovations that offer even more environmental benefits that will differentiate us from lower cost, commodity suppliers. A good example of such products is our recently announced Waterless Jeans. A

single jean uses over 10 gallons of water in its finishing process; the Waterless Jeans can save over 90 percent of this water. Another opportunity for us is energy efficiency. At a single distribution facility, we calculate annual savings potential of over $600,000/year, a 33 percent savings at this site. The millions of dollars that we could save we would be able to reinvest in our business.

Our goal is to achieve carbon neutrality by reducing the amount of energy we use and moving to 100 percent renewable energy. The immediate short-term target is to reduce energy use in our global owned and operated locations by 11 percent by 2011 compared to 2007.

One of the problems we have in achieving our goal of carbon neutrality is uncertain and stop and start government policy, from a failure to enact comprehensive climate and energy legislation to uncertainty about whether there will be an extension of the grant in lieu of the tax credits for renewable energy projects which will limit the amount of renewable energy we will be able to acquire and the cost of that energy. And in terms of energy efficiency, we can do more, faster and cheaper with federal legislation that incentivizes utilities to work with us. In addition, there are substantial upfront costs we must make to invest in energy efficiency that are difficult for us to finance.

Wearing my other hat, as the former CEO of Good Energies, a major investor in renewable energy and energy efficiency, I can give some perspectives on why Levi

Strauss has difficulty in achieving its objectives to achieve carbon neutrality through investments in energy efficiency and through purchases of renewable energy.

First some broader market problems:

1. Low natural gas prices. Shale gas exploitation has dramatically increased the amount of natural gas produced from existing and old fields. Renewables are a small percentage of installed capacity of electricity, but until recently were approaching half of incremental additions to capacity, with natural gas turbines accounting for the other large piece. That was with natural gas at $7/mcf. At $4/mcf, the calculation is different for utilities.
2. In contrast to most other recessions, this one has seen reductions in demand for electricity. It means that renewables have to compete in substitution market that is much harder than when utilities are searching for incremental capacity.
3. For those that are involved in making solar panels, as one example, lower cost Chinese manufacturers are gaining substantial market share; wind turbines and batteries loom as other area of vulnerability.
4. The U.S. is losing market share in financing of renewable energy projects to European and Asian banks that are developing experience in structuring projects. Some financing from Asia supports local manufacturers.

Without putting too fine of point on it, the wind industry in the US is struggling; the First Wind IPO was cancelled; only 4 GW of wind will be installed this year, down from 10 GW last year.

A number of domestic solar manufacturers are suffering, particularly those with innovative technologies, and manufacturers of energy efficiency devices for buildings are having a tough time as well.

Hence, rather than Congress contemplate ways to accelerate a growing industry, in fact, by some measures, the renewable energy industry in the U.S. has been moving backwards.

That's some of the bad news.

The good news:

1. There's lots of good technology around. And it resides in many different parts of the US, unlike Silicon Valley that was the center for IT innovation.
2. In spite of the problems above, there are meaningful potential opportunities to make money. Even with low natural gas prices, equity investors in wind and solar parks can get returns of around 9-12 percent for 20 years using proven technology with an investment grade counterparty. Given that Jack Meyer, who ran the Harvard endowment

for many years, has been saying that it will be difficult to earn more than 5 percent real returns on a portfolio, the 9-12 percent returns on renewable energy project investments ought to seem pretty attractive. Then there are energy efficiency investments. On a risk-return basis, energy efficiency in the US economy represents one of the great money making opportunities of all time. Given that more than 95 percent of energy is wasted by the time a simple electric pump does its work, you may get a sense of the hundreds of energy efficiency opportunities in lighting, motors, air-conditioning windows, appliances, and so on. Many of these investments have paybacks measured in months, not years. As commercial and residential buildings use 40 percent of energy in the US, the opportunity is immense. But even bigger is the efficiency opportunity in electricity generation. Utilities have to provide generation for peaks in demand. And providing for peak demand is very expensive to them (and to consumers). There's no reason, however, why someone's refrigerator, AC, washing machine and dishwasher need to run at the same time, but utilities need to provide peak electricity for all these appliances running at once. Shifting loads would represent a major cost savings for consumers and for utilities.

3. There's also money. Clean tech is the biggest part of the venture capital business. There are literally hundreds of new clean tech funds that have been founded. And away from venture capital, there are billions and billions of dollars waiting to be invested, from corporations that would

like to invest in energy efficiency, to individual savers that face the unpleasant choice of keeping their money in T-bills with no interest rates or risk putting money back into the stock market.

So what's the problem? There's money and a market opportunity.

The problem is that the money is one place and the incentives are in the other. In particular, we do not have a financial structure that is effective or efficient in promoting renewable energy production or energy efficiency adoption.

1. Tax credits. The USG gives incentives to renewables in the form of tax credits. Unfortunately for independent developers, tax credits do not provide direct value. Independent developers finance projects using the cash flows of the project itself. Depreciation of the equipment, and interest deductions from the debt shield most of the income for a big period of the project's life, so giving more tax credits in the form of the ITC doesn't help. It means that developers have to go to a tax equity partner in the form of a financial institution that wants to reduce its own taxes. Tax equity is very expensive 12-14 percent, after tax, and not widely available. And the PTC is even worse, since it requires tax equity participants to manage their tax position for up to 10 years. Tax based incentives reduce current cash flows to equity for as much as 8-10 years, making it much less attractive to equity investors in projects. The cash

grant program has been a lifeline to independent developers, even with low gas prices. The start-stop nature of tax credit policy for renewables—in comparison to the FIT used internationally—makes investing in US projects less attractive.

2. Bank debt for projects. Projects are funded with bank debt, even though the projects are long-dated assets. Since banks are funded with short-term instruments and deposits, banks have been moving away from giving long term loans to most industries, where the bond market serves as the source of long term funds. The buyers of long dated bonds are investors, such as insurance companies or pension funds that have long dated liabilities and therefore want to hold long dated assets. These institutions ought to be the natural holder of long-term project debt, but are not because the paper does not exist. So we have a situation where banks are reluctant lenders to projects, but where there are billions in pent up demand from investors that are looking for long-term yields. Big –but not too big--projects can now get bank debt and smaller projects are having difficulty getting credit.
3. And the situation will likely get worse under proposed new bank capital reserve requirements. Under these rules, the amount of capital that will need to be reserved against below investment grade or marginal investment grade assets is very substantial. Banks will therefore only lead to those borrowers who can give the banks lots of other revenues.

Independent developers and smaller companies will have a tough time getting credit.

4. A similar situation exists on project equity. The money is there, but obstacles prevent from flowing to where it is needed. While there are billions of dollars in funds eager to invest in wind and solar projects, the yield requirements of these funds exceed the yields the projects can offer. Infrastructure funds typically target 15-20 percent returns while, as noted above, returns the projects can deliver are less, 9-12 percent. Hence, even though these are objectively attractive rates of return, projects that could be built, aren't being built because developers can't find equity at these lower levels. (Although they can from Chinese sources if Chinese equipment is used). However, if there were the ability to create public vehicles for projects –such as an MLP or a REIT-such a public vehicle would reduce the required yields since institutions are demanding a premium yield for illiquidity. A public vehicle would also permit individual investors to participate in long term, low risk, high yield assets. More wind and solar parks would be built, more people would be put to work, by creating more scale in the industry, costs will continue to come down, and individual savers will save more.
5. And the same problem exists in funding energy efficiency investments in buildings. There is a quick payback from such investments, but on residential properties it is difficult to get banks to lend because of the relationship between the efficiency loan and the mortgage on the

property. Lending to energy efficiency projects also requires specialized expertise but it is not possible to get a license to form a specialized bank. Big companies such as Johnson Controls and United Technologies have ample technology and energy efficiency solutions for building owners, but they are not banks and so they don't put up the money to make the investments, either. There are lots of energy service companies and manufacturers of energy efficiency equipment that could greatly expand their businesses if there were ways that efficiency could be financed, including the possibility of leasing equipment.

6. Utility incentives generally still favor production over investments in efficiency. Even the efforts at decoupling may not go far enough to create enough incentives to lead the drive to load shifting. While there are substantial economic gains as higher cost generating facilities are closed, utilities would have to incur write-offs of the equipment and would only take these steps if shareholders got to share in the benefits of the efficiency gains, not just ratepayers. As things stand, there are often few incentives for utilities to innovate, even though the current utility business model is challenged by slow demand growth, difficulty in getting rate increases and in capital requirements for replacing aged generation and transmission capacity. A number of technology companies—from large companies such Google and Cisco to a host of smaller software and hardware manufacturers—are eager to partner with utilities to build the smart grid that would enable load shifting. That there have only been a

couple of million smart meters is less a technology problem and more that regulatory structure is standing in the way of market opportunity,

Some final words about innovation, jobs and China. As much of the recent VC experience in renewable energy has sadly demonstrated, creating more companies without adequately developing end markets puts the innovation deployment cart and horse backwards. We know from the PC industry where computer chips are ever cheaper and have greater performance that innovation follows commercialization, not the reverse. Moore's Law is not an independent law of physics but rests on the role of markets; without a vibrant market into which to sell integrated circuits, the shape of the performance curve would look very different. However, in renewable energy technology, we keep waiting for breakthrough technology that will achieve cost parity with conventional sources before deployment. Because most renewable energy technology is by definition capital intensive, much of cost reduction per unit produced stems from manufacturing scale advantages; these manufacturing scale advantages will rely more on extant manufacturing capabilities in other industries than on fundamental underlying renewable energy technology. A good example is the wind turbine where costs have declined dramatically; large market opportunities created by favorable European electricity rates encouraged established industrial players—in this case Siemens and General Electric—to enter the market with initially "good enough" technology, and through these firms' manufacturing and engineering expertise, they were able

to produce larger and larger windmills at lower costs per watt. In the U.S., we have instead directed policy attention to innovation over deployment. Providing government funding to an early stage technology company makes a good photo op, but without large scale markets, the barriers to cost competiveness are nearly insurmountable since the manufacturer has to find a technology solution that is cost competitive without manufacturing scale benefits. Maintaining policies that rely on this nearly insurmountable innovation problem is the reasons why the last eight Presidents have been unable to make progress in renewable energy penetration. In the US, we struggle to develop domestic markets. The US solar industry has been growing, although more thanks to state initiatives than to the federal government. The U.S. industry, though, is still tiny in comparison with other countries; this year, U.S. solar installations will be less than one-sixth of Germany. Putting innovation ahead of deployment creates dozens of companies developing new technologies vainly hoping they can survive the "Valley of Death" until they can reduce costs enough to gain enough scale, while Chinese companies use scale of "good enough" technologies to lower costs faster. Reducing costs isn't just technology. Nearly half of solar's cost is in its installation; because the industry in the U.S. is not at scale, installation costs are much higher here than in markets where there has been more experience. It often seems far easier for companies to get US Government financing for innovative technology than for building technology that already works. We aren't likely going to "out Chinese the Chinese" is commodity solar module costs, but were we to develop a large domestic market, we might be surprised by innovative, non-commodity products (imagine, as an example, a "smart roof" which had a

system of solar, energy efficiency monitoring and wiring) that might be developed, with lots of jobs created in train. Even Chinese solar manufacturers are looking to open facilities here as US markets expand. Getting the right financing structures in place will develop markets, and with markets will we have greater innovation and jobs.

Biographical Sketch

Richard L. Kauffman is Chairman of the Boar d of Levi Strauss & Co., a leading global apparel company and one of America's most storied brands. He recently stepped down as the Chief Executive Officer of Good Energies, after having built it as one of the largest investors in renewable energy. Since 2007, Richard led $750MM in equity investments in over 30 renewable energy technology companies and solar and wind project developments. He also served on the board of Q-Cells, one of the world's largest producers of solar cells.

Richard Kauffman was previously a Partner of Goldman Sachs where he was chairman of the Global Financing Group, a member of the firm's Partnership Committee, Commitments Committee, and Investment Banking Division Operating Committee. Before joining Goldman Sachs, he was vice chairman of Morgan Stanley's Institutional Securities Business and co-head of its Banking Department. Prior to assuming this position, Mr. Kauffman was vice chairman and a member of the European Executive Committee of Morgan Stanley International.

He is a member of the board of The Brookings Institution, Alvin Ailey American Dance Theater, the New York Philharmonic, Yale School of Management Board of Advisors, and Co-Chairman of the Advisory Board of the Center for Business and the Environment at Yale. He is a member of the Council on Foreign Relations.