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Economic Impact of Japanese Earthquake Will Be Felt For Some Time

by Cheryl Smith, Ph.D., CFA

As we watched the awesome power and devastation of the Japanese earthquake and tsunami, our attention bounced between concern for the more than 18,000 people either dead or missing, horrified fascination with the evolving control issues at the Fukushima Daiichi nuclear power plant, and concern about the eventual impact on the Japanese and world economies. The appalling immediate and local impact of the tsunami was obvious from the photos and news coverage. Recovery is further complicated by the deteriorating and unknown final status of the nuclear power plant.

The economic effect of natural disasters varies with the type of disaster, the location of the disaster, and the degree of development of the country. By virtue of the speed of the water and height of the waves, the tsunami was significantly more destructive than an equivalent volume of flooding from rivers overflowing their banks or the destruction of a dam. In addition, the tsunami carried seawater rather than freshwater,

Continues on page 4

Of Climate Change and Cost Curves

by Natasha Lamb

As communities around the globe strive to meet ever-increasing energy demand and produce sustainable jobs and investments, we are at a crossroads where we must either aggressively adopt non-fossil fuel energy sources or risk exceeding the 2°C temperature rise already expected from the cumulative buildup of greenhouse gases in the atmosphere. Mainstream conventional wisdom holds that nuclear power must be embraced in the transition to a post fossil fuel future, and that solar and wind's high costs and lack of scalability will consign their contributions to the margins. But as we discuss in this article, for reasons inextricably linked to their environmental profiles, nuclear power is still an unattractive financial investment, while solar and wind look increasingly attractive. Most compelling, the costs of providing nuclear power are rising while those of wind and solar are making their way down the cost curve.

According to researchers at the Lawrence Berkeley National Laboratory, photovoltaic (PV) systems costs have dropped 50 percent over the last 12 years, much of it due to module cost reductions that accelerated in just the past two years. According to another report, prepared by

Continues on page 5

Dear Reader

by Matt Patsky, CFA, CEO

It is exciting for me personally and for Trillium to be involved in the emergence of Impact Investing as a vital piece of the larger Sustainable and Responsible Investing (SRI) industry.

I recently had the privilege of attending both the Skoll World Forum and the Social Venture Network's spring conference. These organizations, among so many others, are working to find innovative solutions to the world's most pressing challenges. While attending the Forum, I also had the opportunity to meet briefly with Archbishop Desmond Tutu, who was one of the keynote speakers. The Archbishop spoke appreciatively of the work of Shared Interest, a fund that invests in South Africa's future. The Forum also featured a screening of a short film documenting Ceres' history of addressing sustainability challenges such as global climate change.

As shareowners, SRI practitioners have actively raised social and environmental concerns to companies, engaging with corporate America to create change. It is our experience that most companies (like most people) have a mixed record of strengths and weaknesses, and many of them prove open to overtures from concerned shareowners.

As a part of SRI, impact investors specifically invest in companies and organizations that can generate financial returns as well as an intentional social or environmental goal.

For nearly 30 years, Trillium has offered its clients the ability to achieve this impact by investing a portion of their assets through our Community Investing portfolio. Our clients have partnered with domestic and international loan funds, as well as venture funds, to provide capital for affordable housing development, small business creation, childcare centers, sustainable agriculture cooperatives and renewable energy companies among other social and geographic issues. These investments provide loans and financial services to individuals and community organizations that traditional commercial banks often fail to serve.

Even with the incredible momentum of impact investing, there remains a lack of transparency and standardization in how funds define, track, and report social and environmental performance. This limits the ability of investors to understand the impact of their investments.

Trillium supports the efforts of the Global Impact

Continues on back cover



IN THIS ISSUE

Paul Hilton Joins Trillium2
It Seems to Me3

Shareholder Activism:
Still "Impactful" After All These Years 6
Shareholder Proposals Sponsored by Trillium – 2011 8



Trillium Asset Management Hires SRI Veteran Paul Hilton

Trillium Asset Management is pleased to announce that Paul Hilton, CFA, has joined the firm as a portfolio manager. Paul has been involved in sustainable and responsible investing for over 15 years, working on both the investment and sustainability research and advocacy sides.

“We’re delighted to have Paul join Trillium. His long history as an innovator in the field of SRI augments the deep talent already in place at Trillium,” commented Trillium CEO Matt Patsky. Paul has worked with Trillium staff over the years on various projects, including the co-founding of SIRAN (Social Investment Research Analyst Network, a national group of analysts working to promote dialogue with companies about corporate responsibility). “Everyone looks forward to having him on the Trillium team,” Matt said.

Paul joins us at a very exciting time, as we are experiencing significant growth in institutional and individual assets in the past year. Our strong performance record and shareholder advocacy victories have been generating increasing demand for our services. “Having another experienced portfolio manager allows us to effectively manage this growth,” he added.

Paul told *Investing for a Better World*, “I am very excited to join the outstanding team of socially responsible investment (SRI) professionals at Trillium, to help further build the brand and expand our footprint into new channels. I also look forward to leveraging my experience integrating environment, social, and governance (ESG) research with financial analysis to continue to build strong portfolios for clients. Trillium is at the forefront of ESG integration, and I am thrilled to be a key member in helping to chart this evolving course.”



Prior to joining Trillium, Paul was a vice president for sustainable investment business strategy at Calvert Investments, leading SRI product and business development, with a particular focus on the institutional and international arenas. He also previously held senior positions within Calvert’s Equities and Marketing Departments. Prior to Calvert, Paul was a portfolio manager for SRI at The

Dreyfus Corporation. At Dreyfus he was responsible for social research and advocacy for the Dreyfus Premier Third Century Fund and its variable annuity counterpart, the Dreyfus Socially Responsible Growth Fund. He also served as a research analyst in the Social Awareness Investment program at Smith Barney Asset Management, then a division of Citigroup. Paul started his career in the field as an analyst with the Council on Economic Priorities, a nonprofit known for the influential consumer guidebook *Shopping for a Better World*.

Paul is a former treasurer of the United Nations Environment Programme Finance Initiative (UNEP-FI) and a former co-chair of its Asset Management Working Group. In addition, Paul serves on the board of the Social Investment Forum. A Chartered Financial Analyst, he holds master’s degrees in anthropology and education from New York University and Roberts Wesleyan College, respectively.

Paul is a frequent commentator on SRI to the financial media. He was co-project lead on the influential UNEP-FI report of the Asset Management Working Group, *Fiduciary Responsibility – Legal and Practical Aspects of Integrating Environmental, Social and Governance Issues into Institutional Investment*.



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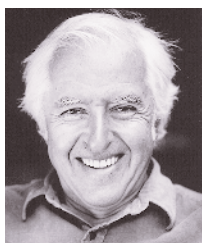
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IT SEEMS TO ME



Nuclear Power Finds Some Acceptance Within the SRI Community

Milton Moskowitz

I was 18 when two atom bombs were dropped on Japan, and I remember feeling relieved because it meant that we probably would not need to sacrifice thousands of soldiers' lives in a frontal invasion of the Japanese mainland. There were few dissenters to this action, which did accomplish its mission. Seeing the destruction wrought in Hiroshima and Nagasaki, the Japanese government surrendered, ending World War II.

It's eerie that 66 years later nuclear energy is again causing havoc in Japan, although this time it was self-imposed. The combination of a 9.0 earthquake and subsequent tsunami crippled the Fukushima Daiichi nuclear plant operated by Tokyo Electric Power (TEPCO). It's a disaster predicted 32 years ago in the movie, *The China Syndrome*, where utility executives are portrayed as obtuse deniers of any dangers associated with nuclear energy operations. Tokyo Electric Power is the world's largest privately owned electricity company, and it has been cast in the same light as the executives in that movie, charged with ignoring previous warnings about design flaws. *The Economist*, in its April 2 issue, cited this appraisal of TEPCO by the well known Japanese management consultant, Kenichi Ohmae: "This company is really rotten to the core." TEPCO shares on the Tokyo Stock Exchange have slid 83 percent since March 11, the day the earthquake hit.

It's interesting that the first warnings about the hazards of nuclear energy came from the scientists whose research paved the way for the atomic bomb, among them Hans Bethe, Leo Szilard, Enrico Fermi, J. Robert Oppenheimer. They founded the *The Bulletin of Atomic Scientists* to express their concerns. Oppenheimer once said: "When you see something that is technically sweet, you go ahead and do it and you argue about what to do after you have had your technical success." And in 1946 Albert Einstein said: "The unleashed power of the atom bomb has changed everything save our modes of thinking, and thus we drift toward unparalleled catastrophe."

Early investment advisors using social screens took their cue from this group, establishing nuclear power as a no-no for investment along with tobacco and weapons production. **General Electric, Westinghouse, Babcock and Wilcox** and **Emerson Electric** were thus rendered ineligible for Social Responsible Investments (SRI). No new nuclear plants have been ordered in the United States since 1978.

SRI's position on nuclear power began to soften with the advent of climate change and sustainability as important social issues. The argument here is that we need to reduce our carbon

footprint to curb the warming of the globe – and in that struggle nuclear power can play a role. Compared to coal, it is clean energy, provided it doesn't implode. One of the major converts to nuclear power was Stewart Brand, founder of the Whole Earth Catalog (in 1972) and someone who had a long association with environmentally-conscious groups. He changed his mind about nuclear energy in 2004 and has since debated Amory Lovins on this subject. Here is Brand's view:


Coal's waste stream of carbon dioxide is turning the Earth into a solar cooker. Nuclear's waste stream is tiny by comparison, and it's easily contained and monitored locally. Furthermore, with fourth generation reactors, the spent fuel can be reused.

Also pro-nuclear: the Obama administration.

These ideas have had an impact in the world of social investing. No advisor that I know has added General Electric to its portfolio but at least two leading mutual fund operators – Calvert and Pax World – have relaxed their total ban on companies with nuclear involvement. Bennett Freeman, Calvert's Senior Vice President of Sustainability & Policy Research, explained the firm's position:

In 2007 we decided to allow for the first time investment in companies that may have legacy nuclear plants, but only in certain funds. We do not invest in companies that are developing new nuclear capabilities. We made the change for several new funds, not as any kind of endorsement of nuclear power, but because we felt it was important to have a full spectrum of energy options. If you're a utility like Florida Power & Light, which is generating 40 percent of the wind capacity in the United States, we want to acknowledge that affirmatively. We don't want to penalize you because at the same time you're operating a few legacy plants from the '60s and '70s.

That's quite a different position from the one held by Physicians for Social Responsibility, a longtime campaigner against use of nuclear power. After the Fukushima plant blew up, the group issued a broadside which said: "Nuclear power is uneconomical. Nuclear power is polluting. Nuclear power is a health threat."

Nothing equivocal about that statement. 

Milt Moskowitz is a journalist and author who has been writing about corporate social responsibility since 1968. He is co-author of the annual *Fortune Magazine* survey, "The 100 Best Companies to Work for in America," and the author of *The Executive's Almanac: A Diverse Portfolio of Eclectic Business Trivia* (Quirk Books, 2006).



Japanese Earthquake (continued)

Continued from page 1

and as the tsunami's waters retreated, they left chemicals, salt, industrial wastes, sludge, and raw sewage in their wake. For example, *The Wall Street Journal* reported that up to forty percent of the farmland in the coastal city of Sendai has been destroyed by the increased salinity and contamination of the soil.

Earthquakes can also be more devastating than river floods or floods caused by the destruction of a dam, because they have a widely disruptive effect on roads, bridges, railroads, and power and telecommunication networks. This effect is complicated by the continuing series of aftershocks, many of which also qualify as major earthquakes. The massive scale of the earthquake greatly increases the probability of further significant quakes throughout Japan. Since the earthquake was centered off the less heavily-populated northeast coast of Japan, the death toll was less than it would have been if it had been near Tokyo, Osaka, or Kobe.

Wealthier countries, and more highly developed and industrialized countries such as Japan, can marshal more resources to provide relief and to rebuild, and thus can be presumed to rebuild more quickly than would a more impoverished country. Fifteen months after the 1995 Kobe earthquake, productive capacity in that city had returned to 98 percent of its pre-quake level, while Haiti was still struggling to reestablish the most basic level of services 15 months after its 2010 earthquake.

The concentration of population, manufacturing, and shipping in Kobe resulted in a higher loss of property, buildings, and infrastructure. However, rebuilding in the more rural and less densely populated area hit by the 2011 tsunami will be more difficult and perhaps more expensive on a per capita basis because its victims are more numerous and geographically dispersed, and any particular improvement or rebuilding will benefit fewer people.

Nationally, Japan has the capacity to provide aid to the area, if it has the political will to do so. Monetary policy options are limited, since central bank interest rates are already near zero. Japan's public debt levels were already high, as a result of Japan's prolonged economic slump after its real estate crisis in 1992. Prompt and effective reconstruction requires significant spending. Since Japan has struggled to generate sufficient effective demand over the past two decades, this additional spending is unlikely to instigate higher overall inflation in Japan in the short term. Since the population of the immediately affected area is older than the general Japanese population, rebuilding homes and restoring

community services will not result in as significant a rebound in production and productivity as was the case in Kobe, so public expenditure on disaster recovery is unlikely to generate any substantial increase in productive capacity and is also unlikely to bring in additional tax revenue. Therefore the addition to debt levels may be long-term. The Organization for Economic Cooperation and Development's most recent analysis of the Japanese economy estimates that the effect of the earthquake and tsunami on Japanese economic growth will be temporary, dropping from a 3.9 percent growth rate in 2010 to 0.8 percent in 2011, returning to 2.3 percent in 2012¹, and significantly less than the 20 percent drop in real output as a result of the financial crisis precipitated by the bankruptcy of Lehman Brothers in September 2009. At

the end of the first quarter 2011, Japan's economy had shrunk by an annual rate of 3.7 percent, far worse than the 1.9 percent predicted by economists surveyed by Bloomberg and plunging the country into recession.²

Outside of the immediate impact area, the disaster disrupted the power grid, and much of Japan experienced loss of electricity for at least some time; the loss of electricity further complicated disaster management at the Fukushima Daiichi nuclear power plant. Outside of the impact area, the power grid has largely been restored, so losses in auto and electronics

production outside of the immediate area are likely to be temporary. The fishing industry appears to have been more significantly damaged, as the tsunami damaged most of the smaller fishing boats and many of the larger ones; replacing such a significant loss will take time. In addition, as a result of the leakage of radiation from the Fukushima Daiichi nuclear power plant, smaller fish off the east coast of Japan, even those not immediately in the area, are showing levels of radioactive contamination unfit to eat; we can expect that the exposure from these radioactive fish will bioaccumulate over time in larger fish. The fishing industry, like the local agriculture industry, is thus likely to experience significant and extended disruption. The continued lack of control over the fuel rods and containment pools at the nuclear power plant only hinder efforts to restore economic activity. The ultimate size and extent of the safe perimeter area is as yet unknown. While the still unfolding nuclear disaster in Japan has raised anxiety levels, and may delay expansion plans in Asia, in the U.S. the Nuclear Regulatory Commission appears to be focusing on the reliability

The Wall Street Journal reported that up to forty percent of the farmland in the coastal city of Sendai has been destroyed by the increased salinity and contamination of the soil.

Continues on page 7

1. "Japan's Economic Outlook Following the 11 March 2011 Earthquake," April 21, 2011 at <http://www.oecd.org>.

2. "Earthquake and Aftermath Push Japan Into a Recession," *New York Times*, May 18, 2011.



Climate Change and Cost Curves *(continued)*

Continued from page 1

Dr. John O. Blackburn and Sam Cunningham of Duke University, these cost reductions have brought solar power to parity with nuclear. The Duke report draws on the work of Mark Cooper of Vermont Law School's Institute for Energy and the Environment, concluding that third generation nuclear will cost 16 cents per kWh on average. The investment bank **Lazard Ltd.** estimates nuclear slightly lower at 12.3 cents per kWh and solar at 15.6 cents. But whether it is 12 or 16 cents one can expect the nuclear cost curve to start climbing, due to increased regulatory, safety, and permitting costs post-Fukushima. Meanwhile, solar's cost curve is headed south and expected to be cost-competitive without subsidies by the end of the decade.

The Rocky Mountain Institute (RMI) sees great efficiencies ahead for solar beyond reductions in module costs. Its recent report, *Achieving Low Cost Solar PV*, asserts that installation costs alone, known as "balance of system" costs, represent half the cost of a solar system and can be reduced by 50 percent over current best practices.

RMI's Amory Lovings points to private equity as a gauge of where the smart money is flowing. In 2010, \$151 billion in private dollars underwrote 50 gigawatts of renewable energy, while nuclear received no inflow at all. Lovings goes further to highlight wind energy's inherent cost advantage over nuclear: "they [nuclear plants] cost two to three times as much as new wind power, and by the time you could build a reactor, it couldn't even beat solar power."

This last point is especially relevant, given the urgency of making the transition to clean energy sources in the midst of climate change. Although nuclear has been championed in some quarters as the "no carbon" solution, the time required to build a nuclear plant disadvantages it relative to solar and wind. New nuclear plant construction requires a 60-month timeline and is growing, versus 18 months for wind installations. While nuclear plants are stuck in the planning and construction phase, renewable energy installations can be quickly deployed. Further, with the cost of renewables continuing to decline over time, nuclear begins to look less and less competitive.

It is also important to consider whether estimates of nuclear energy's potential contribution to slowing global warming are misleading. According to a Carnegie Endowment report, many estimates unrealistically assume nuclear would replace carbon intensive coal-fired energy generation alone. A more likely scenario is that nuclear capacity will displace natural gas, wind, solar, and

other forms of lower-carbon energy as well. The all-coal assumption leads to artificially high emission reduction projections.

Nuclear generation is also burdened by high upfront costs. In fact, nuclear plants do not generate profits in their first decade, which is why financing, which can range from 25 to 80 percent of total costs, has been such a challenge. As taxpayers and investors, we should question the total costs, including waste disposal, disaster preparedness, healthcare, terrorist threats, and loan defaults. Cost overruns have been the norm for the industry. The Congressional Budget Office reported in 2008 that historic cost overruns were 207 percent prior to the Three Mile Island disaster and 250 percent following the event. Even the highly touted AREVA, a French nuclear conglomerate with third generation technologies, was one and a half years behind schedule and \$1 billion over budget in building its Olkiluoto, Finland plant.

Solar is not the only alternative power source journeying down the cost curve. Many alternatives boast competitive cost structures. Wind costs 8.5 cents/kWh, geothermal 7.5 cents, and energy efficiency 2.5 cents, by far the cheapest with the least technology risk. These solutions are poised to transform the energy infrastructure globally, from a centralized generation model to a distributed, more efficient power system. Layer on "smart grid" technologies that enhance the efficient delivery of energy to consumers, and we will be able to effectively harvest solar and wind power from the center of the country and transmit it to higher density population centers.

But cost breakthroughs alone will only go so far to hasten the adoption of wind, solar and other clean technologies when government incentives reward nuclear and fossil fuel development. Public policies must practice a "reverse discrimination" in favor of subsidizing non-nuclear renewables. A forthcoming report by the Intergovernmental Panel on Climate Change will argue renewables could provide up to 77 percent of the world's energy needs by 2050, but only if the government and private sector were willing to invest up to \$5.1 trillion through 2020, and \$7.2 trillion in the decade following.

Despite the sunny outlook [*pun intended - Ed.*], the critical question is how to achieve reliable baseload power when the sun is not shining and the wind is not blowing, as intermittent energy sources only produce power about 30 percent of the time.

Natural gas is currently the most viable alternative given its lower carbon profile, but the bulk of the U.S.'s abundant gas beds must be extracted with hydraulic fracturing (or "hydrofracking"),

Continues on page 7

"While inherently safe renewable competitors are walloping both nuclear and coal plants in the marketplace and keep getting dramatically cheaper, nuclear costs keep soaring, and with greater safety precautions would go even higher."

*~Amory Lovings,
Rocky Mountain Institute*



Still “Impactful” After All These Years

Jonas Kron, JD

In the Winter 2011 issue of *Investing For A Better World*, our colleague Farnum Brown described shareholder advocacy as version 2.0 on SRI’s (socially responsible investment’s) travels towards 3.0, and discussed the importance of directly pressing companies to improve their environmental and social impacts. Similarly, Amy Domini of Domini Social Investments recently wrote passionately in the *Huffington Post* about the importance of shareholder advocacy as a meaningful way for investors to have a positive impact on the world. Both pieces touched upon the ongoing debate about what to call our field. What was once “socially responsible” or “ethical” investing is now “ESG” (environmental, social and governance) investing or “sustainability” investing. We welcome the newest arrival, “impact investing” into the lexicon as a term that encompasses the new types of enterprises being started by social entrepreneurs as well as one that describes what labor plans, religious shareholders and socially concerned investors been doing for three decades.

Both Farnum’s and Amy’s pieces also noted some examples of successful shareholder advocacy that speak to the impact of SRI/ESG investing. We thought it might be a useful contribution to the nomenclature discussions to devote some space to reviewing some of the most recent “impactful” shareholder campaigns from SRI/ESG firms (with apologies to language purists).

Toxic Chemical Phaseouts. Some of shareholder activists’ “greatest hits” have been in persuading companies to reduce or eliminate their use of toxic chemicals. They are found in virtually every ecosystem in the world, and up to 300 toxic chemicals have been found in humans. The following are examples of company actions taken following shareholder dialogues and/or proposals:

- **General Mills** announced that it would no longer use bisphenol A (BPA) in its Muir Glen brand tomatoes packaging (2010)
- **Apple** announced it would stop using brominated flame retardants in its computers (2007)
- **Sears Holdings** (Sears and K-Mart) began a multi-year process of phasing out PVC products and packaging (2007)
- **Whole Foods** announced that it would remove baby bottles and other products that contain BPA from its shelves (2006).

“Impact investing”... encompasses the new types of enterprises being started by social entrepreneurs as well as one that describes what labor plans, religious shareholders and socially concerned investors been doing for three decades.

Political Spending Disclosures. The *Citizens United* Supreme Court case of 2010 renewed attention to the role of the corporate sector in politics and the public policymaking process. Shareholders have been working to lift the veil on corporate political spending since 2004. Assisted by the nonprofit Center for Political Accountability, shareholders have persuaded 52 major corporations (including 35 in the S&P 100) to disclose and require board oversight of their political spending with corporate funds, beyond what is required to comply with the laws.

Corporate Sustainability Reporting. Before SRI investors founded Ceres and the Global Reporting Initiative, standardized corporate sustainability reporting was virtually nonexistent, and where it did exist it was guided by trade association criteria that lacked public credibility. Today, thanks to persistent and diligent shareholder advocacy, about 1,800 companies produce reports based on the GRI guidelines, and demonstrating that “what gets measured gets managed.”

Lesbian, Gay, Bisexual and Transgender nondiscrimination policies. Shareholder advocates can rightly claim credit for persuading many of the nation’s most prominent corporations to adopt inclusive nondiscrimination policies. Activists have filed well over 200 resolutions that have led to better policies at 150-plus corporations – affecting the lives of millions of workers around the world. Many additional companies have changed policies simply in response to inquiries from shareholders.

Home Depot Wood Purchasing Policy. In the late 1990s a broad coalition of shareholders added their voices to the campaign demanding that the world’s largest retailer of lumber products stop selling wood products from endangered forests. Using the vehicle of a shareholder resolution and outreach to large institutional investors, the shareholders generated twice as much support as was typical for a resolution in the 1990s. The campaign resulted in a commitment to phase out sales of wood products from endangered forest areas within three years, and the company’s commitment to give preference to Forest Stewardship Council certified lumber wherever possible. ♻



Japanese Earthquake (continued)

Continued from page 4

and duration of backup power supplies in its review of existing nuclear power plants. Overseas, since Fukushima the German government has announced it will phase out its nuclear program, and Italian voters rejected a ballot proposal in June to restart their country's shuttered nuclear facilities.

Global Impact Limited

Overall, the direct effect on the global economy has been limited so far, with most effects transmitted through disruptions in the supply chain, but even these limited effects may have already been enough to destabilize the already tenuous world economy, and the financial impacts may magnify the disruption. Japan's imports and exports are approximately four percent of overall world trade, but a much higher percentage of automobiles, chemicals, electrical equipment, semiconductors, and transportation equipment. All of these industries have highly integrated global supply chains. Ironically, the iconic dependability of Japanese produc-

tion has supported extremely tight, just-in-time inventory management, which has amplified the effect of supply disruptions. Companies reporting lower earnings as a result of the earthquake included **Apple**, **Texas Instruments**, and **Tiffany's**, while **Honda**, **Toyota**, **Nissan**, and **GM** have all reported disruptions or factory closings due to a lack of parts produced in Japan with the loss in production estimated at 100,000 cars. Supplies of electronic chips have been disrupted as well. Japan is the second largest importer of oil in the world, importing 5.2 million barrels of oil per day. A number of Japanese refineries have been shut down, which may help moderate the increases in oil prices instigated by political unrest in North Africa and the Middle East. Combined with the political crisis in North Africa and the Middle East, the disruptions in specific industries and uncertainty over the lack of control at the Daiichi nuclear power plant might have been enough to stall the fragile world economy, and indeed, the U.S. economy appears to be softening. ☺

Climate Change and Cost Curves (continued)

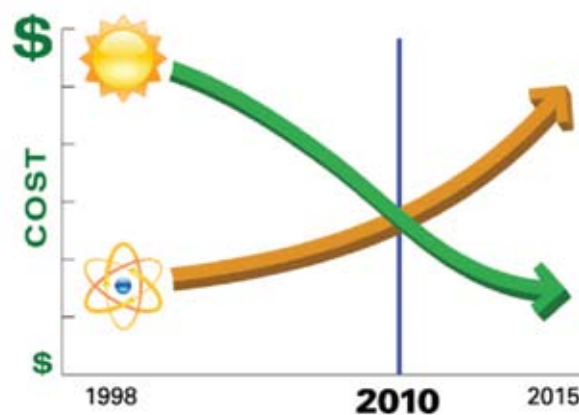
Continued from page 5

a technique linked to highly publicized instances of groundwater contamination and well blowouts. It remains to be seen whether drillers will rise to the occasion to mitigate the risks to public health and the environment, or whether far reaching legislation will be necessary.

Projected technological advances hold the promise that solar may one day contribute to baseload needs. The World Resources Institute report *Juice From Concentrate: Reducing Emissions with Concentrating Solar Thermal Power*, promotes Concentrating Solar Thermal (CST) power as a base load solution. CST combines solar power and thermal storage to power steam turbines around the clock.

As ESG investors, we look for the most viable, cost competitive technologies that also deliver the least environmental, social, and governance risk. Representative Ed Markey (D-MA) articulates the importance of the investor's perspective:

Wall Street is what did in the nuclear industry after Three Mile Island and Chernobyl... It is Wall Street again today that is going to believe that nuclear power has become an increasingly risky financial investment.




NC Warn: Waste Awareness and Reduction Network.

As ESG investors, the onus is on us to determine risk in the context of cost curves, climate change, and viability. Given the trend lines, it's clear for the foreseeable future that solar and wind are truly clean, safe and renewable, while there is little evidence to support the inclusion of nuclear power in an ESG-screened portfolio. ☺

Sources: *The Wall Street Journal*, "Japan's Farmers Confront Toxins from the Tsunami," April 6, 2011; *The Economist*, "Aftershocks," March 17, 2011; Galen Barbose, et al., *Tracking the Sun II: The Installed Cost of Photovoltaics in the U.S. from 1998–2008*, Lawrence Berkeley National Laboratory, December 2010; *Solar and Nuclear Costs: The Historic Crossover* (Blackburn and Cunningham at www.ncwarn.org); Lazard Ltd., *Levelized Cost of Energy Analysis – Version 3.0*, February 2009; Lionel Bony, et. al., *Achieving Low Cost Solar PV: Industry Workshop Recommendations for Near-Term Balance of System Cost Reductions*, Rocky Mountain Institute, December 2010; Amory Lovins, "Learning From Japan's Nuclear Disaster" blog post, March 18, 2011 (at <http://blog.rmi.org>); Sharon Squisconi, *Nuclear Energy: Rebirth or Resuscitation?* Carnegie Endowment for International Peace, March 2009; *Special Report Renewable Energy Sources – Summary for Policy Makers*, International Panel on Climate Change, May 2011; Britt Childs Staley, et. al., *Juice From Concentrate: Reducing Emissions with Concentrating Solar Thermal Power*, World Resources Institute, May 2009; David Weigel, "Full Steam Ahead," *Slate Politics*, March 14, 2011.

Dear Reader *Continued from page 1*

Investing Network (GIIN), an organization that is committed to increasing the effectiveness of impact investing. To address these challenges, GIIN is expanding upon work initiated by the Rockefeller Foundation, the Acumen Fund, and B Lab to develop and promote a common framework for reporting the performance of impact investments.

As it reaches scale, impact investing will continue to be a powerful complement to philanthropy and government efforts to address many issues including eradication of disease, stabilization of climate change and provision of basic social services. From our earliest days, Trillium has been a leader in helping our clients participate in community/impact investing. Trillium is committed to expanding our clients' ability to invest in market-based solutions to the world's most pressing challenges. 



Archbishop Desmond Tutu with Matt at the Skoll World Forum.

2011 Shareholder Proposals Sponsored by Trillium Asset Management

Climate Change	Dominion Resources (7%), Duke Energy (8%)	Report on the financial risks of continued reliance on coal contrasted with increased investments in efficiency and cleaner energy	<i>Withdrawn – company will produce report</i>
	St. Jude	Issue a sustainability report describing the company's ESG performance, including GHG reduction targets and goals	
Environmental Health	Coca Cola (25%), Dentsply	Report on alternatives to Bisphenol-A	<i>Withdrawn – dialogue to be continued</i>
Environmental Justice	Chevron (25%)	Add environmental expert to Board of Directors	
	PPG (7%)	Disclose environmental impacts at community level	
Equal Employment Opportunity	Home Depot (24%)	Disclose workplace demographic data	
Recycling	Procter & Gamble (vote TBD)	Procter & Gamble (vote TBD)	
Inclusive LGBT Workplace Policies	Gardner Denver, Lowes	Ensure nondiscrimination policies cover lesbian, gay, bisexual and transgendered workers	<i>Both withdrawn when company agreed to implement proposal</i>
Sustainability Reporting	Smuckers (vote TBD)	Publish a sustainability report on coffee	
Media Responsibility	AT&T, Comcast, Verizon	Implement "net neutrality" principles (free and open Internet)	<i>Omitted from the ballot</i>
	CenturyLink	Net neutrality and privacy	<i>Withdrawn – dialogue to be continued</i>
Tar Sands	ExxonMobil (26%), ConocoPhillips (28%)	Report on financial risks of tar sands oil extraction	<i>Withdrawn upon improvements made to lending criteria</i>
	RBC	Financial risks of lending to oil sands operators	
Hydraulic Fracturing	Anadarko	Environmental impacts from hydraulic fracturing operations	<i>Withdrawn upon company's agreement to provide greater disclosure on fracturing risk management</i>
Political Contributions	State Street Bank (44%), Halliburton (46%), 3M (36%), IBM (31%), Pentair	Provide comprehensive disclosure of all contributions used for political purposes	<i>Omitted as duplicative of another shareholder's resolution</i> <i>Withdrawn after improvements made to company's transparency and accountability mechanisms</i>
	Ford Motor	See above	
	Pentair, Best Buy, Target	See above	
	JP Morgan (37%)	Initiate a review of the company's role on the Board of the U.S. Chamber of Commerce	
Water Scarcity	Sysco (TBD)	Assess water risk in supply chain	

Bold indicates a "lead filing" where Trillium acts as a primary engagement contact with a corporation. All others are proposals that we have co-filed with other concerned investors who provide that level of leadership.

The companies above may or may not be on our current buy list. Inclusion of holdings in this article is not meant to be a recommendation to purchase these securities. Trillium's investment

team and process continuously and regularly supervise holdings to determine entry and exit prices for all holdings. You can find the full text of our proposals at <http://trilliuminvest.com/our-approach-to-sri/advocacy/resolutions-page/resolutions-by-year/> and more specific information about each issue via the search engine on our web site at www.trilliuminvest.com

