Arnerich Massena
& ASSOCIATES, INC.

Sustainable Investing

Opportunities in a green market

Arnerich Massena & Associates, Inc.

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Contributors, Arnerich Massena:
Tony Arnerich, Chris Abbruzzese, Sheree Demers Arntson, Dane Grouell, Jillian Perkins, Travis Pruit, Bryan Shipley, Lynn Spruill

Contributors, Ecotrust:
Astrid Scholz, Bettina VonHagen, Daniel Etra

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"After two years of intensive research, including over 500 visits and interviews with companies, consultants, scientists and legislators, we predict that the effort to reduce greenhouse-gas emissions will require trillions of dollars of capital, take decades to complete and have profound implications for the addressable market and potential growth rate of hundreds of corporations around the world. Thus, it merits intense study by investors."

- "Abating Climate Change: What Will Be Done and the Consequences for Investors" by Amy Raskin, Nils Mellquist, Saurin Shah, and Brett Winton; AllianceBernstein Research on Strategic Change, January 2008

The Shift to Sustainability

The word "sustainability," once a catchword of co-ops and community gardens, has now permanently entered the lexicon of business and commerce. Whether or not one is convinced that climate change is an immediate threat, either environmentally or economically, the marketplace has already adjusted to the likelihood of the threat. Along with these adjustments, investment opportunities are emerging. Business risks driven by changes in demand, regulations, and input costs are creating opportunities for companies that take into account the need for sustainable practices. Businesses focused in sustainable industries are poised at the edge of unprecedented growth. We have researched the arena of sustainable investing not only from a perspective of conscience, but because we believe a sustainable investment strategy has the potential to perform as well as, or possibly better than, a traditional investment portfolio.

"Most have put aside the debate over the extent to which human activity has contributed to climate change and are focused, instead, on climate risk as a business reality for which they must plan. In a survey completed by 354 of the *Financial Times* Global 500 companies, more than 90 percent cited climate change as posing commercial risks and/or opportunities."

- "Climate Change: Business Risks and Solutions" by Tom Walsh, Marsh Risk Alert; Volume V, Issue 2, April 2006

In this paper, we will identify and address:

- The emerging risks businesses are facing in the current climate and why we consider these risks to be indications of long-term shifts in the marketplace
- Why we believe businesses will need to change the way they operate to compete effectively and how sustainable policies contribute to long-term success and growth
- How the investment industry is developing tools for evaluating sustainability so that investors can take advantage of this long-term growth
- The investment opportunities arising in industries focused on climate change mitigation and why we believe they offer significant long-term growth potential
- How investors can take advantage of the opportunities in sustainable investing

"As we look across the global economy, it becomes apparent just how widespread the business opportunities are in the climate change space. Companies and investors are quickly realizing that climate change is not merely a social, political or moral issue — it is an economic and business issue as well. This is translating into a wave of investment and innovation."

- "Investing in Climate Change: An Asset Management Perspective" by Mark Fulton, John Willis, Paul Spence, Nicolas Huber, and Loretta Dennet; Deutche Asset Management, October 2007

Business Risks of Climate Change

Climate change presents a number of challenges to businesses. Some challenges are a direct result of global climate changes and others are indirect effects of the massive shift in attitude about the need to address global warming. With every new risk comes accompanying opportunity for companies to improve their planning, their processes, and ultimately their competitiveness in the marketplace.

Direct Risks

The direct risks of climate change come from physical effects such as increased weather-related events, temperature changes, floods, and changes in infectious disease patterns. Businesses are faced with damage repairs, rising insurance costs, and potential disruptions in day-to-day activities. "The melting of glaciers, a rising sea-level, and a rise in the frequency and intensity of violent weather events could put installations and infrastructure at significant risk in the more affected regions. The sectors most affected would probably be utilities; integrated oil and gas companies; insurance; and real estate, along with building and construction." (Llewelyn, p. 51)

Experts suggest that the economic damage to our country directly caused by global warming will be significant. "We take it that the economic damage caused by climate change will build progressively to a rate of 0-3% of global GDP per year by the time that Earth's mean temperature has risen by 2-3 degrees Celsius, and at considerably more for larger temperature increases." (Llewelyn, p. 48) Common estimates suggest a rise between two and five degrees Celsius within the next 80 years, possibly sooner. The chart on the next page estimates some of the direct costs of global warming to the U.S. economy.

What effects of climate change will affect businesses and industries directly?

The Center for Health and the Global Environment at Harvard Medical School has developed two scenarios of climate change futures. The first scenario is one of gradual climate change, in which we see "a growing frequency and intensity of weather extremes accompanied by disease outbreaks and infestations that harm humans, wildlife, forests, crops and coastal marine systems. The events and their aftermaths would strain coping capacities in developing and developed nations and threaten resources and industries, such as timber, tourism, travel and the energy sector. The ripples from the damage to the energy sector would be felt throughout the economy." (Center for Health and the Global Environment, p. 7) The second scenario envisions more dramatic and sudden impacts: "Some of the impacts envisioned… are very severe and would involve catastrophic, widespread damages, with a world economy beset by increased costs and chronic, unmanageable risks." (Center for Health and the Global Environment, p. 7) Those impacts suggested include heat waves, wildfires, floods, water shortages, and severe storms. The Center emphasizes that, although frightening, neither of these models presents a worst-case scenario. On a more positive note, according to the Center, climate stabilization is also possible, provided aggressive global measures are taken to reduce greenhouse gas emissions and seek energy sources other than fossil fuels.

The Global Warming Price Tag in Four Impact Areas, 2025 through 2100									
	In billions of 2006 dollars				**As a percentage of GDP**				U.S. Regions Most at Risk
	2025	**2050**	**2075**	**2100**	**2025**	**2050**	**2075**	**2100**	
Hurricane Damages	$10	$43	$142	$422	0.05%	0.12%	0.24%	0.41%	Atlantic and Gulf Coast states
Real Estate Losses	$34	$80	$173	$360	0.17%	0.23%	0.29%	0.35%	Atlantic and Gulf Coast states
Energy Sector Costs	$28	$47	$82	$141	0.14%	0.14%	0.14%	0.14%	Southeast and South-west
Water Costs	$200	$336	$565	$950	1.00%	0.98%	0.95%	0.93%	Western states
Subtotal for Four Impact Areas	**$271**	**$506**	**$961**	**$1,873**	**1.36%**	**1.47%**	**1.62%**	**1.84%**	

Source: "The Cost of Climate Change" by Frank Ackerman and Elizabeth A. Stanton; *Global Development and Environment Institute and Stockholm Environment Institute-US Center*, Tufts University, May 2008

Clearly, these are major costs for government, businesses, and individuals to bear. These cost projections will have a major impact on corporations as they will need to begin taking these risks into account. By the same token, stock valuations should include these costs and risks going forward.

"The dramatic growth in investment in climate solutions is being driven by a widespread recognition that climate change poses great financial risks and that the solutions present tremendous economic opportunity. Led by savvy institutional investors and venture capitalists, investors understand that the high costs of carbon emissions cannot be avoided, and that aggressive management of climate change will likely increase market returns in the coming century."

- "Climate Change From the Investor's Perspective" by Adam Seitchik, Ph.D., CFA; Growing the Economy Through Global Warming Solutions presented by Civil Society Institute

Indirect Risks

Along with the potential direct damage of climate change, businesses will have to cope with a variety of associated indirect costs and risks.

Regulatory risk: With increasing international pressure and a growing awareness of the costs of mitigating damage from climate change, local, state, and federal governments are stepping in and increasing environmental regulations. Companies will need to adjust to meet the costs of becoming compliant; those businesses that seek out early solutions will likely have a long-term advantage.

Demand drivers: The national consciousness has made a definite shift in the direction of environmental awareness. As this awareness grows, so does demand for environmentally-friendly businesses, energy-efficient products, and sustainable practices. Consumer and shareholder scrutiny will hold corporations to a new standard. Competition will also drive businesses to improve their efficiency, sustainability, and public image.

Litigation: Class action lawsuits from homeowners and lawsuits from state agencies are on the rise. With this shift in public awareness comes a higher likelihood of attention on businesses that fail to uphold environmental policies. In addition to potential damage costs due to litigation, firms are also faced with rising insurance costs as a result.

> "In ruling that the federal Environmental Protection Agency may regulate greenhouse gases, the [Supreme] court acknowledged that states and certain landowners have standing to pursue claims based on property damage caused by global warming. The scope and frequency of lawsuits against greenhouse gas emitters are only bound to increase as the fact of global warming becomes more widely accepted and its effects manifest themselves more visibly and profoundly."
>
> *- "A Firestorm of Lawsuits Over Global Warming" by John D. Green; Entrepreneur.com, September 15, 2007*

Inputs: Costs of inputs such as materials, energy, transportation, and other resources may increase or become more unpredictable through changes in global demand. Businesses will need to look to sustainable practices to minimize and/or diversify their exposure to fluctuating costs and to maintain profit margins.

Fortunately, any risk also presents an opportunity. Businesses that take measures to prepare for ways in which climate change may directly or indirectly affect them position themselves better for the future. These actions make good business sense; firms' reputations among shareholders and customers are elevated, providing an edge over competitors. Companies that are forward-looking in terms of seeking out more sustainable energy and input sources, or more sustainable technology and products, will likely be better-equipped to face future regulations and cost increases.

> "There is mounting empirical evidence that companies with better corporate governance practices carry less risk and outperform poorly governed companies over time; that companies with strong environmental performance carry less risk and outperform environmental laggards over time; that companies with good workplace practices enjoy higher productivity, higher morale, lower turnover and increased profitability."
>
> *- "From SRI to Sustainable Investing" by Joseph F. Keefe; Greenmoney Journal (www.greenmoney.com); Summer 2007*

Investment Opportunities

ESG (Environmental, Social, Governance) Investing

Even as the risks of climate change threaten businesses with rising costs and increased regulation, there are opportunities for investors. A growing number of businesses are seeking to improve their sustainability and instituting new policies and practices that will keep them thriving as they move into the future. For investors, having a way to evaluate and identify these businesses may add another, very significant, level of value to the analysis of investment potential.

> "In short, the pace of a firm's adaptation to climate change is likely to prove to be another of the forces that will influence whether, over the next several years, any given firm survives and prospers; or withers and likely dies."
>
> *- "The Business of Climate Change: Challenges and Opportunities" by John Llewellyn; Lehman Brothers, February 2007*

The investment community is responding to this new market environment, creating tools for evaluating sustainable businesses and creating sustainability indexes for measurement of performance. Those working to create a sustainability investing model point out that sustainability factors are indications of stronger business models, more forward-thinking management, and ultimately, financial performance. Investors and business leaders alike are discovering that not only do sustainable practices benefit the environment, but they also contribute to a strong bottom line. New sustainability-related mutual funds, different from the socially responsible funds of the past which were based largely on exclusionary investing, focus on seeking businesses with best-in-class sustainable efforts and practices.

Greenwashing?

Large corporations are leaping to declare their environmentally friendly programs and processes. For example, Dell, Google, and Yahoo have pledged to become carbon-neutral, with companies like Timberland and News Corp. pledging carbon neutrality by 2010. (Ball, 2008) However, "there's not yet uniform agreement on what should be counted in such programs, says Pankaj Bhatia, a policy expert at the World Resources Insitute…" (Ball, 2008) This is not to say these and other companies aren't making significant efforts toward sustainability, only that such declarations are not necessarily meaningful. Investment analysis of corporate sustainability will have to focus on a company's specific actions rather than their public relations.

ESG (environmental, social, and governance) investing seeks to identify those companies that have achieved a level of corporate sustainability in their strategy and practices. These firms will be able to leverage business opportunities in terms of energy efficiency, cost savings, branding, and reputation, as well as mitigating some of the business risks of climate change. ESG investing cuts across all sectors and all types of businesses. Joseph Keefe, President and CEO of Pax World Funds, defined ESG investing at the Pinchot Institute in his lecture, *Ecology and the Challenge of Sustainable Investing*: "Sustainable investing is the full integration of environmental, social and governance (ESG) factors into investment analysis and decision making. Through a combination of rigorous financial analysis with equally rigorous ESG analysis, a sustainable investing approach seeks to identify companies whose business models and practices are more sustainable than their competitors." We believe that this sustainability factor will become a key indicator of business performance and investment potential moving forward. The next step is for investment managers and investors to develop effective methods for assessing sustainability.

Investment firms around the world are doing exactly that. Dow Jones has created the Dow Jones Sustainability Indexes, evaluating companies around the globe for best-in-class sustainability and environmental practices. Former Vice President Al Gore and David Blood, the former head of Goldman Sachs Asset Management, have teamed up to form Generation Investment Management LLP, dedicated to "investing for sustainability — that is, assessing the way social, economic, environmental, and ethical factors affect the strategy and valuation of businesses." (Mendonca and Oppenheim) More and more fund managers, from ABN AMRO to UBS, are including sustainable funds in their fund families. Some firms, like Generation Investment Management and Sustainable Asset Management, are focusing exclusively on sustainable investing.

> "Sustainable investing… is a financial discipline. It's about performance. It's about aligning ESG [environmental, social, and governance] performance with financial performance — combining rigorous financial analysis with equally rigorous environmental, social and governance analysis in order to invest in forward-thinking companies with sustainable business models. Moreover, as ESG research and analytics become more robust, rigorous and quantitative, sustainable investing will lend itself to sophisticated attribution analysis that I believe will demonstrate its superiority as a long-term investing approach. Given an equal playing field, companies that integrate strong ESG performance into their business models will be more likely to outperform their less enlightened competitors over the long term."
>
> *- "From SRI to Sustainable Investing" by Joseph F. Keefe; GreenMoney Journal, Summer 2007*

Investing in Climate Change Mitigation and Sustainability

ESG is one approach to developing a sustainable investment strategy. Another approach to investing sustainably is to seek out sectors and companies actively involved in developing sustainable solutions, working toward climate change mitigation, or developing tools for improved resource management. As solutions for global warming become increasingly sought-after, companies providing these solutions are poised for growth. For instance, there are attractive investment opportunities in alternative energy, carbon sequestration activities, clean technology, energy-efficient building, forest management, and healthcare technology, among many others. AllianceBernstein, for instance, has identified industries it believes will be winners in the coming short-term, medium-term, and long-term time frames. Over the long term, they identify electric-generating equipment, energy-efficiency enhancing technologies, engineering and construction, CO_2 transport, and fuel-efficient vehicles as some of the areas likely to see significant growth. (Raskin, Mellquist, Shah, and Winton)

The Demand for Sustainable Investments

Recent growth and future projections for sustainable industries such as cleantech, green building, and renewable energy indicate the growth expected in the climate change investment space.

> "An estimated total of $148.4bn was invested in clean energy technologies, companies and projects in 2007."
> *- New Energy Finance; www.newenergymatters.com*

> "Numbers from New Energy Finance found that venture and private equity investments in clean energy grew 34 percent to $9.8 billion in 2007, with an interesting note that investors are returning to early-stage startups."
> *- "New Energy Finance's Top Ten Clean Energy Funds of 2007" by Katie Fehrenbacher; earth2tech, March 4, 2008, www.earth2tech.com*

> "Once again, global investment in sustainable energy broke all previous records, with $148.4 billion of new money raised in 2007, an increase of 60% over 2006. Total financial transactions in sustainable energy, including acquisition activity, was $204.9 billion. Asset finance — investment in new renewable energy capacity — was the main driver for this surge in investment, rising 68% to reach $84.5 billion in 2007, fueled mainly by the wind sector. Public market investment also raced ahead in 2007, with investment of $23.4 billion in 2007, more than double the $10.5 billion raised in 2006."
> *- "Global Trends in Sustainable Energy Investment 2008: Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency," United Nations Environment Programme and New Energy Finance Limited*

> "According to a 2005 special report on the construction industry by McGraw-Hill, the market for environmentally friendly real estate will be worth as much as $20 billion by 2010. Last summer, a survey released by McGraw-Hill Construction and the National Association of Homebuilders showed those estimates may be too modest: It projected that by 2010 green builders may have captured as much as 10% of the share of new home construction, or an astonishing $38 billion, up from 2% and $7.8 billion today."
> *- "Green Real Estate" by Suzanne McGee; Financial Planning; March 1, 2007, www.financial-planning.com*

> "Annualized growth in the wind sector over the last four years has been 73%... Investment in solar has grown at an annualised rate of 254% over the last four years... Other renewables comprising mini hydro, marine and geothermal have grown by 97% over the same period."
> *-"New Energy Finance Summit: the Book 2008"; New Energy Finance; www.newenergyfinance.com, April 2008*

> "Energy efficiency is a difficult area for investors to find pure-play investment opportunities in, but even so, our figures show the amount of investment rising at an annual rate of 65% over the last four years. Clean energy services are also flourishing, with investment in these up 52% a year."
> *-"New Energy Finance Summit: the Book 2008"; New Energy Finance; www.newenergyfinance.com, April 2008*

> "Ultimately, we expect most mainstream investment analysis to take into account the effects of climate change in terms of costs and opportunities for companies and markets. However, from an Asset Management perspective, we expect return opportunities over the coming years to be sufficiently large to justify the creation of strategies that focus on areas such as renewable energy, water and agribusiness, and we believe these opportunities will continue to exist for the foreseeable future."
>
> *- "Investing in Climate Change: An Asset Management Perspective" by Mark Fulton, John Willis, Paul Spence, Nicolas Huber, and Loretta Dennet; Deutche Asset Management, October 2007*

While investor demand may push climate change sectors into the short-term limelight, there is strong reason to believe that the opportunities in climate change mitigation are trends that will reward investors over the longer term.

International demand: The international community will continue to push for progress in reducing carbon emissions and energy consumption. "International organizations are likely to continue demanding climate change initiatives, whether this is the United Nations (ie, through UNFCCC or IPCC), regional organizations (eg, European Commission) or other global groups (eg, IEA or OECD)." (Fulton, Willis, Spence, Huber, and Dennet)

Climate change legislation: The U.S. government is poised to begin legislating climate change solutions. "More than half of U.S. states representing 60% of U.S. GDP have already committed to reducing greenhouse gas emissions, and there are more than 10 federal climate-change bills calling for nationwide reductions in emissions…" (New Energy Finance, 2008)

Government support: Climate change initiatives will likely be supported by government funds and policies, reducing risk for investors. "Without doubt, renewable energy sources will be amongst the winners from climate change, as they will continue to gain from climate-policy-motivated subsidies in the next few years. In contrast, government measures will tend to make fossil fuels more expensive." (Heymann)

Unpredictable oil prices: As oil resources become squeezed, availability and cost may be unpredictable, increasing the need for alternatives. "What cannot be ignored is that large quantities of global oil and gas reserves are in politically-charged areas. This is another risk factor, influencing security of supply and price volatility, that should not be underestimated." (Heymann)

Sustainable Investing at Arnerich Massena

As a firm, we are strongly committed to a sustainable future. However, our primary goal is to assist our clients in meeting their investment objectives. We believe that either an ESG sustainability screen or a selective sustainability investment strategy not only has the potential to achieve long-term growth, but to provide a premium over traditional investments when incorporated appropriately as part of a diversified portfolio. We have been focusing significant efforts over the past two years to research sustainability, investigate the sustainable investing climate, and develop strategies for incorporating sustainable investments into our portfolio construction. For clients who are interested in a sustainable investing approach for all or a portion of their portfolios, we have developed both an ESG sustainability path and a sustainable solutions investment path.

ESG Investment Strategy

Arnerich Massena analysts have explored mutual funds that incorporate ESG criteria into their stock selection process. We have selected those products we feel are best-in-class in major asset classes. These options are comparable to traditional investment options in terms of strategic risk and return characteristics and are benchmarked to widely-used broad-market indexes.

We would recommend using these investment options particularly in defined contribution plans, in which plan investment options need to fit specific criteria in terms of risk and return characteristics. We would also recommend them to other clients who wish to incorporate ESG investment vehicles into their investment portfolio.

Sustainability Investment Strategy

For clients who wish to enter the sustainable investment space, Arnerich Massena is participating in the development of a set of investment vehicles that seek out growth opportunities in businesses and industries focused on climate change mitigation and sustainable solutions, such as alternative energy, resource efficiency, water, cleantech, and forest management. Arnerich Massena will likely fill a subadvisor role in the development and ongoing management of this series of funds, with the responsibility of identifying opportunities, researching investment managers, and completing due diligence on all investments in these products. Our goal is to provide products from which we can construct a diversified portfolio, spanning most major asset classes and also including some alternative investments. Fixed income, global equity, long/short equity, real estate, and private equity are all anticipated to be represented.

Because these options will provide representation across most asset classes, clients may choose to invest all or a portion of their portfolio in climate change fund options. Specific client objectives will determine our recommendation of the ratio of sustainable options to more traditional investments.

We anticipate that the future will bring greater and greater demand for sustainable investment strategies and are excited to be at the forefront. We look forward to introducing our clients to the opportunities we see in this investment space and hope that this paper serves to open a dialogue with clients.

Endnotes:

"Abating Climate Change: What Will Be Done and the Consequences for Investors" by Amy Raskin, Nils Mellquist, Saurin Shah, and Brett Winton; *AllianceBernstein Research on Strategic Change*, January 2008

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