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## CAPITAL AND CLIMATE CHANGE: PROGRESSIVE INVESTMENTS IN A CHANGING GLOBAL LANDSCAPE

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Climate change has been a source of debate for decades, and while the nations of the world finally agree on its scientific premise the argument continues as to the measures necessary to curb its effects. In the U.S., the Obama Administration put skeptics on notice by formally recognizing the issue as a significant reality with vital implications for the future.

Although climate change poses a great challenge for sustaining the world, with such obstacles come unique opportunities for innovative companies to leap to the forefront. Savvy investors can capitalize on these advancing trends by investing in companies that are well-positioned for leadership in a climate change economy; indeed, renowned fund manager Jeremy Grantham went so far as to declare that “global warming will be the most important investment issue for the foreseeable future.”<sup>i</sup>

That sentiment is hitting the mainstream. A recent New York Times article by Tom Zeller, Jr. recognized the growing constraints that global warming policy shifts place on capital financing for environmentally damaging, “dirty” industries. According to Zeller, bank giants Citigroup, JP Morgan Chase and Morgan Stanley have already signed on to climate change industry standards like the 2007 Carbon Principles, which aim “to standardize the assessment of carbon risks in the financing of electric power projects in the U.S.”<sup>ii</sup> Such environmental risk management programs reflect the ongoing upset of lending conditions as banks reassess how their reputation and bottom line are affected by the companies in their lending portfolios. This gives an old truism new context – that managing for the future means managing liability – as climate change continues to redefine risk in industry markets.

As climate change brings bank lenders and overall industrial standards under increased scrutiny, investors should look to companies that take strides to manage their climate change liabilities by advancing technologies that improve or negate their overall environmental impact. A 2009 Reynders, McVeigh Insight Paper, *Investment Opportunities in the Climate Change Economy*, asserted that energy-focused investments and resource conservation initiatives have been a primary focus of Socially Progressive Investment portfolios. “On a macro level,” the paper notes, “growth in climate-oriented sectors is critical. And on a micro level,

investors that are proactive and intelligently diversify their portfolios within the right industries will benefit from extensive momentum.”<sup>iii</sup> Two years into a new administration and the evolution of global climate change policies, investors can revisit these investment themes – which are tailored to thrive in a new business landscape – with fresh perspective and greater clarity.

In this light, investors should investigate companies that maintain a fundamentally sound balance sheet while pioneering climate-friendly advances as attractive mid to long term investments. Three areas stand out as open fields for potentially world-changing technology: energy efficiency, water management, and sustainable agriculture.

## **Energy Efficiency**

With only 5 percent of the world’s total population, the U.S. produces nearly 25 percent of all annual global heat-trapping emissions,<sup>iv</sup> and electricity generation accounts for fully 1/3 of them.<sup>v</sup> It is not surprising, then, that efforts to protect precious resources – and opportunities to make financial gains in doing so – are centered on electricity. From updating transmission efficiencies to renewable energy sources, the energy crisis is changing the way companies look at optimizing the creation and delivery of electricity. Climate-oriented companies that respond to the call for new energy by supplying innovative technologies or manufacturing components will set the stage for an energy-driven economy, and are therefore worth investors’ consideration. Though there are numerous opportunities, two sectors are poised for immediate gains:

- ***Smart Grid Technology***

According to the U.S. Department of Energy (DOE), “if the [electric] grid were just 5 percent more efficient, the energy savings equate to permanently eliminating the fuel and greenhouse gas emissions from 53 million cars.”<sup>vi</sup>

The DOE also calls for the implementation of a smart grid to integrate advanced functionality into the nation’s electric grid, enhancing its reliability, efficiency, and security, all while reducing carbon emissions.<sup>vii</sup> Smart Grids give utilities real-time, two-way communications with each segment of the electrical grid assessing loads, usage and electricity around the clock. Such advanced metering technologies enable a near-instantaneous balance of supply and demand, helping utilities modify patterns of energy usage.

A recent study by ABI research announced that the cumulative global investment in smart grids will total over \$45 billion in the next five years. Much of that spending (\$41 billion through 2015) will go towards transmission and distribution investments to repair aging infrastructures.<sup>viii</sup>

Big business is already making its presence known in the space; in September 2010, Cisco Systems established an entrée into the smart grid market through a partnership with Itron. The move signifies the company’s belief that a meaningful transition to smart grids is inevitable for U.S. utility companies.<sup>ix</sup> Cisco officials have quoted the potential market opportunity at \$100 billion.<sup>x</sup>

- ***Renewable Energy Sources***

Currently, one half of U.S. electricity is generated by burning coal, which contributes to global warming through heat-trapping emissions. As companies seek to end reliance on fossil fuels under pressure from inevitable climate change legislation, renewable energy sources like solar, wind and geothermal power are met with increased interest. In fact, a lead beneficiary of venture investments in the second half of this decade has been renewable energy.

Renewable Electricity Standards (RES) enacted at the state level require electricity suppliers to gradually increase their use of renewable energy sources as an affordable solution to containing climate change. RES have already been enacted in 28 states and D.C., and by 2025 will result in a 570 percent increase of total renewable energy capacity levels in the U.S. This reduces total annual CO2 emissions at an equivalent of taking 30 million cars off the road.<sup>xi</sup>

In Colorado, for example, the current target is to use renewable sources for 30 percent of its electricity by 2020. As of 2010, the state generates almost 6 percent of its electricity from wind, and its commitment to clean energy has driven growth in the solar industry from 100 companies in 2007 to more than 400 today.<sup>xii</sup>

National RES in the U.S. remain elusive, however the example set by other countries demonstrates the potential of more overarching standards. The financing of wind turbines, solar panels, and low-carbon technology in China climbed to \$11.5 billion, a 72 percent jump from the year-earlier quarter, while U.S. investment in clean energy for the quarter measured \$4.9 billion; Europe's, \$4.5 billion. There will be significant opportunities for suppliers and innovators that are operating in these arenas.<sup>xiii</sup>

## **Water Management**

While the effects of climate change manifest most obviously in the energy industry, they are also present in the decline of potable water. The water crisis is no longer a predicted reality, but has taken hold; the UN General Assembly recently named clean drinking water as a fundamental human right, sounding a call to arms for companies to innovate new strategies to reach the near 900 million people worldwide who lack access to clean water.<sup>xiv</sup>

Companies and investors that are positioned to be part of the solution have the opportunity to play a profitable, critical leadership role in a new economy (for more detail, please download the Reynders, McVeigh Insight paper *The Business of Water: A New Age of Investment Trends and Technologies* at <http://www.reyndersmcveigh.com/insights.html>). With a \$400 billion global market, the well runs deep for businesses that can provide advanced conservation and replenishment technologies.

The means of measuring water use will be increasingly important as more complex pricing structures call for automated meters to be deployed by water utilities. New metering technologies allow for variable pricing, making irrigation and agricultural practices more efficient; prices can decline during off-peak hours, and usage quotas will force those who overextend to pay higher rates.

Direct water reuse has also emerged as a cost effective and environmentally sustainable alternative for communities seeking to address water supply and demand imbalances. There are currently over 70 major water reuse projects under construction globally, a significant sign of growth led by initiatives in filtration, reverse osmosis, and ultraviolet (UV) purification.

Conserving and reusing water will help, but a full solution will also require increasing the supply. Of the estimated 14,000 desalination plants producing more than 12 billion gallons of water a day worldwide, most are of the energy intensive thermal variety,<sup>xv</sup> although over 70 percent of new plants are using the cheaper process of reverse osmosis. Rising energy prices should inspire continued technological breakthroughs, lowering costs and driving a growth rate of at least 10 percent annually.

### **Sustainable Agriculture**

In the wake of the “industrialized age of agriculture,” sustainable agriculture practices center on protecting the environment while producing high quality, affordable food by investing in local farming operations and communities. Although the objective is to minimize environmental impact through the conservation of resources, sustainable agriculture also stabilizes farming operations and provides opportunities for technology providers to gain a foothold in the marketplace.

A recent study from The Natural Resource Defense Council and Tetra Tech predicted that climate change and unsustainable uses of water will create shortages in nearly one-third of the U.S. – including important agricultural epicenters like California and Florida – necessitating drastic change in irrigation practices.<sup>xvi</sup> Companies at the helm of developing smart irrigation and drip irrigation technologies (such as Deere, Jain Irrigation and AquaSpy) are dealt a great opportunity to surge ahead in the field of sustainable agriculture. By better understanding the soil moisture content and delivering precisely the amount of water that is needed, water usage can be cut by an estimated 30 percent.

Another major trend in more sustainable agriculture is “precision farming.” By utilizing GPS (Global Positioning System) and GIS (Geographical Information System) devices on tractors, farmers can determine within one meter of accuracy not only soil moisture content and quality, but also the quality of the crop. Through advanced tractor controls, farmers can regulate the placement and amount of fertilizer to exact standards, allowing for a significant reduction in wasteful fertilizer use and harmful fertilizer runoff. Innovative industry leader Deere is a primary constituent in the progress toward precision farming.

While many aspects of sustainable agriculture have centered on farm-based practices, the latest movement in sustainable agriculture is to bring the farms closer to the consumer. From the humble beginning of the farmer’s market to the rising interest in Community Supported Agriculture (in which consumers buy into shares of local farmer’s output), this progression has given life to urban farming. City to city, all-season greenhouses can be seen atop major office buildings or in “vertical farming,” in which entire urban high-rises or “farmcrapers” are dedicated to growing. Bringing the goods to the people cuts down on use of diesel fuel and reduces stress on oft-overused stretches of farmland.

With these and other trends already in play, the intelligent corporate world is beginning its adjustment to a climate change economy. From a marked rise of CO<sub>2</sub> levels since the Industrial Revolution, to the increase of the Earth’s temperature, to the measured crisis for clean water and fertile land, Jeremy Grantham’s reasoning resonates: “climate warming involves hard science.”<sup>xvii</sup>

## Investing Beyond the Boardrooms

In addition to investing in innovations geared for these inevitable global shifts, investment opportunities exist around more subtle pushes for education on climate change science, as well as its business implications and social impacts. Investors can participate in targeted social ventures, some of which use education tools to disseminate the facts of climate change and likely changes to come. These initiatives generate modest returns while providing an opportunity for investors to inject capital into a growing network of programs fueled by efforts to promote awareness and catalyze visible alterations in human behavior.

MacGillivray Freeman Films (MFF), for example, has for decades produced IMAX films focused on impactful environmental issues while making a financial mark as well – MFF announced in 2010 it is the first documentary film studio to earn \$1 billion in ticket sales at the box office. Over their lifetime, films that MFF and Reynders McVeigh have partnered on have seen Academy Award nominations, have been translated into as many as 18 languages, and each production has reached more than 15 million people directly through viewings in theatres associated with cultural centers across the world. Because of the IMAX venue's common affiliation with museums, approximately 80 percent of revenues from the films flow to the cultural institutions that house such theaters – a significant social benefit.

MFF's *To the Arctic 3D*, slated for release in 2011, is both an investment opportunity and an education initiative based on the impact of climate change. The film portends that the dramatic changes evident in the Arctic, though presently subtle worldwide, are a “canary in the coal mine” – a warning of changes that will soon be felt on a global scale. While the film educates current and future generations on the impact of climate change, the venture is also poised to earn positive returns for investors. The film typifies the targeted development of a new business landscape that plays an intriguing supporting role in socially progressive investment portfolios.

Whether investigating social ventures such as MFF films or more traditional approaches based on equities, investors should pursue strategies that incorporate the hard science of climate change and other proven evolutions – not the trends of the past. Players in renewable energy, water management, and sustainable agriculture bear watching; fundamentally sound companies that are poised to capitalize on disruptions caused by climate change may well prove to be the new captains of industry. Investors who can identify these budding opportunities and the traditional or targeted social ventures which accompany them will be poised to take lead in the changing global landscape.

## *About the Authors*

**Charlton Reynders, III**, Chairman and CEO of Reynders, McVeigh Capital Management, has more than 15 years of experience in investment management and social venture investing. His passion for forward thinking investment strategy rooted in fundamentals has provided a guidepost for his success to date.

In addition to his leadership in the traditional investment management world, Chat has structured and funded public/private partnerships that have brought more than \$150 million in revenues to leading cultural institutions around the world – projects that have won numerous awards. In this vein, he has for decades produced socially-oriented IMAX films including *Dolphins*, which was produced in conjunction with the National Wildlife Federation and garnered an Academy Award nomination in 2000, and *Coral Reef Adventure*, which received the largest grant in the history of the Informal Science Division of the National Science Foundation. He currently sits on the Advisory Boards of Project Adventure and the MacGillivray Freeman Educational Foundation.

**Patrick McVeigh**, President and Chief Investment Officer of Reynders, McVeigh Capital Management, is widely recognized as a pioneer in bringing traditional investment management together with socially responsible investing. He was one of three original employees at Trillium Asset Management; his research was key to asset growth from startup to \$700 million.

A voice of reason and leadership within the socially responsible investing realm, Patrick has served as Managing Editor of *Investing for a Better World*, authored numerous articles on ethics and ecology, and contributed chapters to *The Social Investment Almanac* (New York: Henry Holt, 1992) and *Working Capital: The Power of Labor's Pensions* (Cornell University Press, 2001).

Since 1995, Patrick has been project manager for a series of groundbreaking studies conducted by the Social Investment Forum, tracking the growth of socially responsible investing and its implications in the investment markets. He also served on the boards of SEED: The Haitian Community Loan Fund, directing approximately \$1 million to peasant cooperatives in Haiti to create businesses; the Social Investment Forum; and the San Jose Food Co-operative.

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