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WHITE PAPER

PLAYING THE LONG GAME

Why environmental themes should be front and centre for institutional investors

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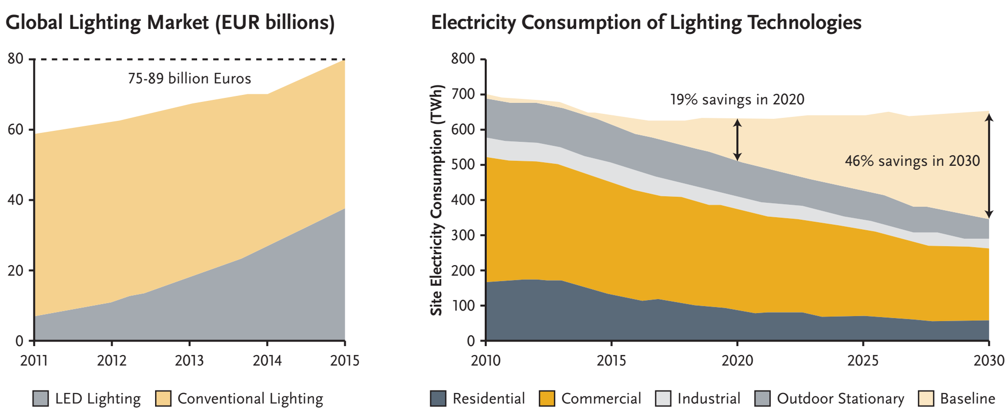
Two decades after world leaders gathered at the 1992 Earth Summit in Rio, the signs of impactful action on global warming are still sparse despite the rising involvement of the financial community. While some continue to debate the science and ultimate impact of human activity on temperature trends, rapid innovation in the field of sustainability has been disrupting the status quo, pushing the boundaries of traditional industries and producing compelling and marketable solutions to the climate change challenge. Asset owners like pension funds must revisit and adapt their investment models to both foster and benefit from this fundamental transformation of the global economy and the capital markets that serve it. Sustainable themes are now an important opportunity set in global markets as investors seek out companies and trends that will innovate and drive economic growth in the future.
We believe the time has come for long-term investors to start allocating a portion of their public equity portfolios to sustainable strategies that offer diversification benefits relative to "mainstream" portfolios and can offer higher growth potential.

Disruption in action

The rationale for sustainable investing is clear: the global population is growing and resources must be used efficiently to meet increased demand while ensuring environmental impacts are minimized. Over the last 10 years, ample support has emerged for fiduciaries overseeing long-term assets to consider these material risks within their investment decisions. But asset owners also need to understand that sustainable investing isn't just a means of risk reduction – it is an opportunity to invest in those very areas of the economy that will drive growth in the decades to come. Consider just a few of the many booming sectors that are responding to growing demand and rapidly transforming traditional industries in the process.

Lighting – The widespread ban on incandescent light bulbs is one of the many forces transforming the lighting field. Smart lighting, dominated by solid-state technologies such as LEDs, has been growing rapidly as policymakers push builders and consumers to adopt energy-efficient practices. It is projected that LEDs will represent 45% of the global lighting market by 2015[1] and residential LEDs could represent 70% of the general light market by 2020[2]. The shift to solid-state lighting is changing the lighting industry and having a direct impact on investors. In 2011, engineering giant Siemens spun out its Osram lighting unit to allow its management to focus specifically on the transformation from conventional solid-state lighting. Recently, industry giant Phillips has made a similar decision. Meanwhile in Canada, the 2014 initial public offering (IPO) of Lumenpulse, a company focused on solid-state-lighting lighting fixtures was heavily oversubscribed due in large part to the company's compound annual growth rate of 78% since 2011.

Figure 1



Source: Bank of America Merrill Lynch, as of April 2013

Efficient vehicles – In order to meet local air quality concerns and address broader issues of carbon emissions, policymakers have set aggressive fuel efficiency targets for passenger and commercial vehicles thereby creating a surging demand globally for hybrid-electric and electric vehicles. Tesla is the current leader in this disruptive trend sweeping through the industry. In Canada, plug-in electric vehicle sales have more than quadrupled over the past three years[3], while the U.S. has seen similar exponential growth – electric vehicle sales have more than tripled from the first quarter in 2012 to the first quarter of 2014[4]. Today, consumers can buy electric vehicles not just from Tesla but from other major auto manufacturers like BMW, General Motors and Nissan. Given the possible cost reductions in battery technology coupled with the increasing cost of compliance for combustion engines, there is little doubt that investors will need to take this theme seriously.

Solar technology – It only takes an hour for the sun to produce enough energy to meet global energy demand for a year and yet solar energy today accounts for a meager 1% of global power consumption. That is changing as rapid cost reduction and new financing structures improve returns and increase penetration. In an increasing number of regions, solar energy presents a direct threat to conventional utilities. Recently in Queensland, the wholesale price of electricity actually fell into negative territory due to a huge influx of rooftop solar (in Queensland there is 1,100 MW of it on more than 350,000 buildings – 1.2 million households use it across Australia).

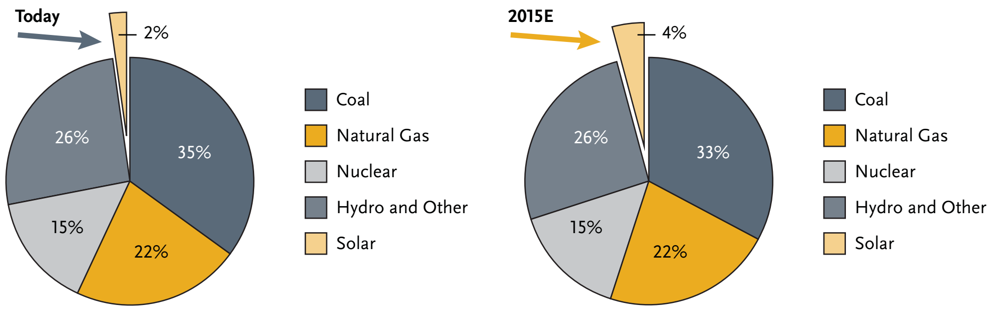
[1] Source: Phillips, as of April 2013

[2] Source: McKinsey & Co., as of 2013

[3] Source: Green Car Reports, as of July 2014

[4] Source: Stifel Nicolas Research, as of April 2014

Figure 2: Solar power vs. total estimated power capacity



Source: FBR Research

Despite the obvious disruptive nature of these technologies, expertise in understanding their investment implication largely remains the remit of specialist funds. The financial-industry model of sector specialists is not conducive to the thematic analysis that would place appropriate emphasis on these technologies, i.e. should residential solar be analyzed as a consumer product, power technology or financing model?

Still, the relative lack of attention given to sustainable technologies by large asset owners is not entirely explained by an ineffectual organizational structure.

Risk aversion and the funding gap

Many of the most innovative environmental companies receive significantly less attention than their counterparts in conventional industries for a rather simple reason – they are riskier when using conventional metrics. In almost every case, disruption of 100-year old industries is not only difficult but capital and time intensive. Post the great recession of 2008-2009, asset owners of all stripes have prioritized near-term cash flows and low volatility over future potential. This is not particularly surprising, at least for pension plans with defined benefit obligations.

It is somewhat difficult to reconcile this risk aversion with the increasing call for a long-term investment focus. While capital rushes towards the conventional energy industry to progress easily defined opportunities in drilling, mining and transport, environmental innovators, particularly in the public markets, often remain underfunded relative to their opportunity. The few exceptions have been 'Yield Cos'[1] that are harvesting cash flows from long-term utility contracts with little or no technology risk. Few investors see it as their role post-2008 to provide risk capital to long horizon themes, regardless of the movement towards responsible investing. When asset owners do make thematic environmental commitments, it is usually within the private market, yet even this strategy has suffered post recession due a lack of exit opportunities. The nuances of capital flows for environmental solutions providers would not be of much concern if it were not for the tremendous level of commitment being made by the financial community to address key environmental issues such as water and carbon emissions.

[1] Recently, a number of renewable power developers have spun out their long-term contracted assets into 'Yield cos' which pay a significant dividend and which are able to grow this dividend through continuing drop downs from the parent company. The Yield co does not take on development risk which is contained at the corporate level, resulting in a lower risk profile and defined growth trajectory garnering a higher multiple.

For instance, the United Nations-supported Principles of Responsible Investment initiative, which encourages organizations to incorporate environmental, social and governance issues into their investment practices across asset classes, has over 1,200 signatories representing US$45 trillion of assets under management globally, including both asset owners and investment managers (Source: UNPRI.org). Meanwhile the Carbon Disclosure Project, an organization working with shareholders and corporations to disclose greenhouse gas emissions of major corporations, is backed by more than 767 institutional investors representing over US$92 trillion in assets (Source: CDP.net).

Despite this commitment, investors continue to prioritize stability over transition. So, while US$5 trillion is suggested for a clean energy transition between now and 2020, it is projected investors will pour US$19 trillion into fossil fuel investments. Similarly, an International Energy Agency report in 2013 estimated total subsidies to fossil fuel industries at $523 billion. This dwarfs renewable energy subsidies which totaled just US$88 billion in the same year[1]. Most investors will understandably not heed calls for 'divestment' of fossil fuel producers given their importance in index referenced strategies but will instead 'engage' with their primary portfolio holdings in an effort to improve environmental performance. In effect, the environmental objectives are rather more flexible, nuanced and long term then the financial ones.

A cleaner future: are investors on the same map?

19 trillion USD estimated business as usual energy investment to 2020	5 trillion USD additional investment required to 2020 for the clean-energy transition
523 billion USD fossil-fuel subsidies in 2011, up 20% from 2010	88 billion USD renewable energy subsidies in 2011
50 EUR/tCO_2 estimated carbon price to effect coal-to-gas switch in Europe	7.1 EUR/tCO_2 2012 average carbon price in Europe
USD/bbl 112 2012 average crude oil price, almost five times 2002 levels. Energy's economic importance keeps rising	20% drop in average EU import prices for steam coal in 2012 vs. 2011

Source: *Tracking Clean Energy Progress, 2013*, International Energy Agency (IEA), 2013

The thematic solution

So how can long-term asset owners like pension funds overcome the 'short-termism' inherent in global capital markets today? A major part of the solution lies with large institutional asset owners themselves. While many have already signed on to the United Nations Principles for Responsible Investment, very few strategies are funded or evaluated based on their ability to promote long-term objectives such as reduced carbon emissions.

[1] Source: European Wind Energy Association, as of February 2013

A thematic approach allows investors to go beyond ESG monitoring and to delve into the specific mid- and long-term trends and structural changes that are at play – and perhaps even mold the future in their interest.We have identified four environmental mega-themes that we believe will remain relevant for decades – Energy and Power Technologies, Waste Management and Pollution Control, Water and Wastewater Solutions and Environmental Health and Safety. The trends in resource efficiency and environmental mitigation reshaping the global economy are directly challenging existing industries and providing companies with opportunities for innovation to emerge. Within each of these themes, it is possible to find companies at different stages in the value chain and of corporate maturity resulting in portfolios with high active share and significant diversification benefits.




Energy & Power Technologies	Waste Management & Pollution Control	Water & Wastewater Solutions	Environment, Health & Safety
Commodity volatility and concerns relating to carbon emissions provide opportunity for new technologies in energy efficiency and alternative energy.	Progressively more stringent regulations for emissions and discharges are driving the need for improved waste reduction, handling and recovery.	Increasing demand on fresh water supplies is resulting in innovation within measurement and transport as well as purification and treatment.	Consumer demand for healthier, environmentally friendly and safer homes and workplaces has resulted in entirely new segments of growth for well positioned companies.

Conclusion

Direct exposure to these fast growing sectors may provide impetus enough for specific allocations but the ancillary benefits may be just as compelling. We have found, through 20 years of experience, that it is possible to create a diversified, high active share portfolio that delivers thematic exposure while at the same time investing in companies that result in significantly lower carbon emissions (by more than half compared to the MSCI World Index). The carbon emission-related benefits of the reference portfolio are merely the first environmental metric that can be externally verified – we also expect that emissions of nitrous oxide and sulphur (the primary contibutants to local air quality concerns) and water consumption will also be lower. The extent of the environmental benefits cannot be attained through strategies that merely under or overweight index names based on ESG critieria.

It's time to realize that our key environmental risks are breeding an entirely new class of technologies and companies that are focused on addressing current environmental challenges. The solutions are out there – but they require investors willing to match their long-term horizons with a readiness to invest in innovation. A thematic approach is the key to navigating that forward path.

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