



WATER: THE NEXT CARBON

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As the world struggles to find the political will to put a price on carbon, it is important to realize that investors began to pay serious attention to this issue more than nine years ago with the launch of the Carbon Disclosure Project (CDP). The CDP currently has investor signatories with more than \$55 trillion under management. The backing of this large investment community has encouraged more than 2,500 organizations in more than 60 countries to report their greenhouse gas emissions (GHGs) through the CDP.

Now, investors are turning their attention to water. The November 2009 launch of the CDP's Water Disclosure Initiative is the surest sign to date that investors are increasingly concerned about the impacts of water scarcity and pollution. In 2010, this initiative will send a questionnaire to the world's largest 300 companies that operate in water-intensive sectors. Investors will use the answers to assess risk and to invest in sustainable water technologies.ⁱ Industries to be targeted first include chemicals, forestry and paper, food and beverage, mining, pharmaceuticals, power generation, and semiconductor manufacturing.

While it took almost ten years from the CDP launch for carbon to reach the mainstream, it is unlikely that it will take ten years for the water crisis to

become material to investors and business owners. While water covers 71 per cent of the Earth's surface and in many regions flows freely from the tap for consumers and businesses alike, the reality is that less than one per cent of all freshwater resources are accessible for use by ecosystems and humans,ⁱⁱ and many believe we are already in a water crisis related to the overall scarcity of usable water and water pollution.

RIVERS AND AQUIFERS ARE BEING DEPLETED DUE TO:

- Population growth
- Dramatically increased demand per person
- Improved withdrawal technologies
- Climate Change

By 2025, the United Nations (UN) predicts that almost two billion people will be living in regions with water scarcity, and two-thirds of the world population could be living under water stressed conditions.ⁱⁱⁱ Already, water stress has led to the degradation of healthy ecosystems and loss of biodiversity, thereby affecting key environmental systems such as nutrient, water and climate cycles.

KEY IMPACTS

- **Drinking Water** - Today almost 900 million people lack access to safe drinking water and up to five million people die each year from water-related illness.
- **Food and agriculture** - Food shortages will increase as the demands of cities and industry are prioritized and irrigation water is diverted from agriculture, which reduces the grain supply.
- **Wetlands** - Half of the world's wetlands have disappeared over the last century.
- **Species** - Over 20 per cent of the estimated 10,000 freshwater fish species are now endangered or extinct.
- **Rivers** - Rivers that now fail to reach the sea, all or part of the time, include the Colorado (the major river in the south-western United States), the Yellow River in China, and the Nile River in Africa.

THE IMPORTANCE OF ASSESSING WATER RISKS AND OPPORTUNITIES

Water has risen to become a significant material risk for many companies, as well as their investors. Recognizing this, the Norwegian government's \$456 billion^{iv} sovereign wealth fund, NOK2, which owns about one per cent of all European equities, recently announced new provisions for water management at the companies in which it invests. Companies will be assessed systematically and individually against criteria specified in the fund's expectations document on water management, each company receiving a scorecard.^v

This initiative by NOK2 highlights the fact that for companies with operations in regions that face scarcity there are potential risks that can have a material impact on financial returns. The extent and impact of water use varies across industrial and economic sectors. However, virtually all business organizations, whether small or large, utilize water in the production of goods and services. In areas of water stress, rapid industrialization and economic development are placing significant demands on water resources. For some companies, the ability to adapt to a water-constricted business environment will have a material impact on its long-term risk profile and profitability.

PHYSICAL RISKS

Companies operating in water stressed regions may experience a shortage of water required for operations. Physical risks can also be embedded in a company's upstream and downstream value chain. Many businesses have not considered the water intensity of either their supply chain, or their products. A shortage of water on either end can have a direct impact on profits.

In 2003, Electricite de France had to shut down a quarter of its 58 nuclear plants due to water shortages caused by a record-setting heat wave. The closures triggered price spikes of 1,300% amounting to €300 million in losses.

In addition, water and energy are inextricably linked. Water plays an important role in energy production, including pumping crude oil out of the ground, helping to remove pollutants from power plant

exhaust, generating steam that turns turbines, flushing away residue after fossil fuels are burned, and keeping power plants cool. Fossil fuel thermoelectric power generation requires between 14,200 and 74,900 litres per 1,000 kilowatt hours, and nuclear requires a staggering 31,000 to 74,900 litres per 1,000 kilowatt hours. Renewable sources such as solar, geo-thermal, and hydroelectric all require less than 4,000 litres to generate the same amount.^{vi} In cases where energy producers experience a limited water supply businesses will be affected by utilities' inability to provide a consistent supply of energy at an affordable price.

REGULATORY RISKS

Regulators may be forced to restrict access to water by imposing limits, or by putting in place a withdrawal cost high enough to reduce demand. In regions where water is priced aggressively as a matter of public policy or due to privatization, water efficiency becomes a competitive cost cutting measure.

In 2006, Australia, a country known for water stress, created the Queensland Water Commission. Operating under a legislative framework, the Commission mandates that large volume users must operate in strict adherence to an approved Water Efficiency Management Plan (WEMP), achieve a 25 per cent reduction or best practice in water use, and provide annual performance reports.

REPUTATIONAL RISKS

Corporate reputations can be affected when excessive water pollution is discovered or when a business is perceived to be withdrawing more water than its fair share. As the notion that water is a fundamental human right gains acceptance, so too does the belief that water-intensive industries have a responsibility to respect water rights in the communities in which they operate.

In 2003 in Kerala, India, both PepsiCo's and Coca-Cola's bottlers lost their licenses to use groundwater after drought and increased competition for local aquifers spurred community dissent.

Failing to do so can impact corporate reputations and in extreme cases lead to the loss of a company's 'license to operate'. Coca-Cola has had to work very hard to improve its global reputation related to water issues after Kerala, including committing to an aggressive water strategy and targets.

COMPETITIVE RISK

Organizations concerned with water scarcity, such as the Food Ethics Council, want to make it easier for consumers to understand the water intensity of the goods they consume. They argue that consumers have no idea that a cup of coffee requires 140 litres or that a pound of beef requires 16,000 litres and that, if products had 'water footprint labels', more consumers would make informed, conscious choices. Carbon footprint labels have recently appeared on a number of products, and it is not unforeseeable that similar water footprint labels emerge as a way to differentiate water efficient product offerings.

In response to consumer interest and the success of its carbon footprint label, Finnish Raisio became the first food-products company to label its products with total water consumption in November 2009.

In Australia certain products including dishwashers and showers must be labelled with a water consumption rating, whether manufactured in Australia or imported.

It is important to note that, for some, the demand for water solutions will present enticing opportunities. Innovative companies will develop mechanisms for reducing the water embedded in their products throughout the supply chain, or may identify new product and service opportunities. In 2004, BlueScope Steel created BlueScope Water, a provider of water storage solutions, in order to capitalize on its existing knowledge of how steel was contributing to sustainable water management. Other companies will discover how their strengths can be applied to solve water problems. IBM's Center of Excellence for Water Management in France was founded based on IBM's unique abilities in high performance computing and analytics, and uses modeling and simulation to develop new insights into smart water management for flood prone regions.^{vii}

Investments in solutions to water-related challenges are supported by recent public policy. As governments struggle to confront the global recession, some are allocating a portion of their fiscal stimulus plans to the growing 'climate economy'. A report by HSBC published in May 2009 revealed that 18 percent of the global *green stimulus* plan (which amounts to over USD \$470 billion) was allocated towards water and waste initiatives by governments, with China at the forefront of investment.

FROM RISK MANAGEMENT TO STRATEGIC MANAGEMENT

All businesses should take measure of their exposure to water related opportunities and risks. The Global Water Tool, launched by the World Business Council for Sustainable Development (WBCSD) in 2007, provides companies with a means to map its water use and assess risks relative to their global operations and supply chains. Companies that identify significant exposure should develop corporate water strategies as they have done with GHGs and energy efficiency. In particular companies should:

- **Develop a global water policy.** Incorporate it into sustainability strategy; complete with clear goals and targets, and key performance indicators.
- **Develop a company-wide 'water footprint'.** Identify facilities and sites that are currently - or likely to be - in water stressed areas, and implement water management strategies in these areas as a priority. The 'Water Footprint Network', launched in 2008, is currently developing standards for water footprint accounting.
- **Develop programmes and performance targets.** Implement formal programmes and performance targets at a corporate level to ensure proactive management of water impacts.
- **Assess water embedded in supply chain and associated risks.** Understand water impacts from upstream suppliers through to downstream customer impact, and focus on the area that has the most impact.

- **Engage with stakeholders at a global and local level.** Communicate water impacts and risks through reporting and improved disclosure. Communicate directly with communities in water stressed regions where water resources are being shared.

The business case for action on water management and risk reduction will likely follow the same path that has brought carbon into the mainstream, although it will be much more industry and regionally specific. Stakeholder and regulatory pressures will increase, in part due to demographic and climate change trends. As a result, some companies' cost structures, reputations and licences to operate may turn out to be surprisingly linked to their ability to manage water impacts.

MESSAGE FOR INVESTORS

To date, company reporting on water-related risks has been less than sufficient. Companies that report according to the Global Reporting Initiative's (GRI) G3 Guidelines have reported on some quantitative metrics (e.g. total water use), but overall there is a lack of discussion pertaining to how a company may be impacted by broader water issues. With such a wide array of industries directly and indirectly dependent on clean and abundant water, and with conditions varying significantly from region to region, it is pertinent that investors assess the exposure of their portfolios to water-related risks, and as well the degree to which companies are responding to and effectively managing this exposure.

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ENDNOTES

ⁱ The Carbon Disclosure Project.
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ⁱⁱ The United Nations.
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http://www.unwater.org/statistics_use.html, Accessed December 2, 2009

^{iv} <http://www.top1000funds.com/latest-news/latest-news/norway-swf-posts-booming-quarter.html>, Accessed December 7, 2009

^v Ethical Corporation, October 2009, pg.8

^{vi} Institute of Electrical and Electronics Engineers.
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