



*Putting Knowledge Into Action*



**Peter C. Fusaro**

*June 12, 2009*

## **Managing The Water Footprint: The Next Financial Market**



**William S. Brennan**

*By Peter C. Fusaro  
Chairman, Global Change Associates  
and UtiliPoint Affiliated Consultant and  
William S. Brennan,  
President of Brennan Investment Partners*

By now we have all heard of the “Carbon Footprint,” and how it impacts our planet. Five years ago, the expression would have elicited blank stares. Today, one cannot pick up a newspaper or peruse the Internet without seeing article after article from around the globe focusing on how the Carbon Footprint is destroying our planet. We believe the general public is about to embrace another footprint that will impact almost every aspect of their lives, the Water Footprint. In commodity markets, many think that water is the next carbon market.

Water and energy are interrelated. Water accounts for as much as 15 percent of energy consumption in many parts of the country. By increasing efficiency through water conservation and recycling practices, we can dramatically cut our energy consumption as well as our carbon footprint. For example, the U.S. Department of Energy estimates that the use of more efficient water pumps could generate energy savings of 20 percent per year. In fact, examining both water and energy sides of the equation could result in better economies of scale. Thus, managing water and energy in tandem makes financial sense.

Today, the water industry is exploring methods of moving and treating water that are more environmentally sustainable and also economically viable. The **water footprint** is an indicator of water use that includes both direct and indirect water use of a consumer or producer. The water footprint concept was introduced in 2002 by A.Y. Hoekstra from [UNESCO-IHE](#) as an alternative [indicator of water use](#). The concept was refined and accounting methods were established with a series of publications from two lead authors A.K. Chapagain and A.Y. Hoekstra from the UNESCO-IHE Institute for Water Education, now at WWF-UK and University of Twente respectively. The water footprint is a geographically explicit indicator, not only showing volumes of water use and pollution, but also the locations.

Cooperation between global leading institutions in the field led to the establishment, in 2008, of the Water Footprint Network which aims to coordinate efforts to further develop and disseminate knowledge on water footprint concepts, methods and tools. Recently, the concept has been questioned for using the term "footprint" which possibly is misleading for people familiar with the carbon footprint. The water footprint concept as described above only includes sums of water quantities without considering related impacts. This is in contrast to carbon footprint where carbon emissions are not simply summarized but normalized by CO<sub>2</sub>-emissions to account for the environmental harm.

## **The Water Footprint**

So why is the water footprint relative? A water footprint consists of three components: the **blue, green and grey water footprint**. The blue water footprint is the volume of freshwater that evaporated from the global blue water resources (surface water and ground water) to produce the goods and services consumed by the individual or community. The green water footprint is the volume of water evaporated from the global green water resources (rainwater stored in the soil as soil moisture). The grey water footprint is the volume of polluted water that associates with the production of all goods and services for the individual or community. This leads to the ultimate question ... how is water used and replenished in the age of climate change?

In terms of industrial use, the water footprint has started to gain traction with companies that rely on ingredients and raw material that are water dependent. As sources of fresh water continue to dissipate, the global demand for food and energy are taxing an already depleted water system that forms the basis of hydro-commerce and the impact of water scarcity. Industries that are the largest water users such as agriculture, food & beverage and heavy industry (manufacturing) are using water footprints to secure water sources and maintain sustainability. In areas where water is abundant and rainfall occurs with some regularity, industry typically does not have to worry about the water cycle. However, climate change is disrupting weather patterns to such a degree that lakes and others sources such as aquifers are literally drying up. This will lead to business interruption, at a minimum, and could lead to the relocation of manufacturing assets to regions where water is plentiful such as the rust belt region of the Great Lakes.

## **Better Water Management**

Late last year several large institutional investors advised 100 of the world's largest companies to improve their water management as water is becoming an increasingly precious global resource. The message was simple...companies that managed their water needs more carefully were more likely to be viable long-term investments. This was the first formalized request which clearly stated that water-related issues are increasingly part of mainstream investment considerations. In addition, the companies were also urged to sign up for the **CEO Water Mandate**, a public-private initiative created by the UN to help companies establish sustainable water management practices.

While the accuracy of the water footprint does have some questions that remain unanswered, such as the discrepancies that exist in water usage when the same product is being produced.

Agricultural comparisons come to mind ... an orange in Florida versus an orange in California versus an orange in Brazil ... all three have different rainfall characteristics. The likelihood that water footprint metrics will improve and move toward standardization is strong. Until a system is developed that is able to produce a score or grade, companies will be able to take data and report it in a fashion that is advantageous to their desired outcome.

While the implementation of a water footprint will move corporations towards an ultimate goal of water conservation and reuse, it is not the silver bullet that solves the issue at hand, which is a looming global water shortage. In comparison to a financial audit (which recent events in the financial markets show that such an audit does not eliminate fraud) a water “audit” is a necessary exercise that eventually will be performed not only at the corporate level but may find its way to municipalities and in our own homes.

## **Trading Water**

In the emerging water markets, we are trading both water quantity and quality. Creating water capital will require a look at both wetlands mitigation and species banking. These are already active, yet small, environmental financial markets. They are over \$3 billion in notional value today. Water quality trading involves what is called “Nutrient Trading.” The fact is water trading can follow the evolutionary path of the highly successful Acid Rain SO<sub>2</sub> allowance program as a financial market. In fact, environmental policy makers are convinced that the emissions trading experience can be applied to water pollution control. The market driver for these changes once again will be government. With an activist environmentalist administration in Washington, there are many opportunities to trade both quality and quantity as a water right. Today, several hedge funds have become active in trading water rights in the panhandle of Texas, southern California, Australia and Israel. Thus, measuring the water footprint makes economic sense as companies begin to think of all environmental attributes as fungible commodities. With climate change becoming more material to the balance sheet, water as a financial product makes economic sense!

---

*Peter Fusaro is holding his next "Introduction to Carbon Trading and Finance" seminar on July 15th at the offices of Covington & Burling in New York City. For further information, please go to [www.pgseenergy.com](http://www.pgseenergy.com).*

*William S. Brennan is the President of Brennan Investment Partners, a Registered Investment Advisor that invests in public equities in the water and natural resource sectors. Mr. Brennan is the portfolio manager of the Kinetics Water Infrastructure Fund (KWIX) and is a managing partner with DUIT Management, a private equity fund that invests in private underground infrastructure companies that provide products and services to the Gas, Oil, water and wastewater industries. For more information, go to [www.brennaninvestment.com](http://www.brennaninvestment.com).*

© 2009, UtiliPoint® International, Inc. All rights reserved. This article is protected by United States copyright and other intellectual property laws and may not be reproduced, rewritten, distributed, disseminated, transmitted, displayed, published or broadcast, directly or indirectly, in any medium without the prior written permission of UtiliPoint International, Inc. The views expressed in this article are those of the authors and not necessarily those of UtiliPoint International.

UtiliPoint's® IssueAlert® articles are compiled based on the independent analysis of UtiliPoint® consultants, researchers, and analysts. The opinions expressed in UtiliPoint's® IssueAlert® articles are not intended to predict financial performance of companies discussed, or to be the basis for investment decisions of any kind. UtiliPoint's® sole purpose in publishing its IssueAlert® articles is to offer an independent perspective regarding the key events occurring in the energy industry, based on its long-standing reputation as an expert on energy issues.

Reprinted with permission from UtiliPoint® International IssueAlert®. Further reproduction or distribution is prohibited without permission.