



Water: The Next Oil or an Infrastructure Play?

By Katie Southwick

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Is Water the Next Oil?

Water-related investing is getting a lot of attention these days, but media reports focusing on the commodity as a scarce natural resource in danger of depletion may be misplaced. Instead, we believe opportunities exist in infrastructure related to water recovery, purification and delivery. This week we review the investment options available for advisors in this \$400 billion global industry

The [Environmental Protection Agency](#) (EPA) estimates that the American water industry needs \$500 billion of infrastructure investment over the next 20 years, providing both investors and private companies with new investment opportunities. According to [Chris Brown](#), chief investment strategist and portfolio manager for Pax World Balanced Fund, many of America's sewage systems were built during the 1950s and need to be replaced. Globally, investments in infrastructure are already underway, including a Chinese plan designed in 2006 to build 200 miles of canals, taking water from the Himalayas and bringing it to the Yellow River. According to Brown, China will spend about \$120 billion on water infrastructure over the next few years.

Because many industries depend on clean water -- including agriculture, pharmaceuticals and electric power -- major companies have begun investing in water. In February, 2007, General Electric purchased Ionics, Inc., a water treatment company, for \$1.3 billion. They also declared that they plan to reach \$10 billion in water-business sales over the next 10 years.

In addition, there are investment opportunities in desalination technology, says the [Christian Science Monitor](#). Major companies like General Electric have plans to open several desalination plants a year worldwide, each of which will cost up to \$300 million. Although desalination is the most expensive way to produce clean water, it is an extremely effective technique, says Dan Brown, the CEO of Ionics, Inc. According to Brown, desalination "provides the ultimate answer for water-supply problems," as its source is "effectively limitless."

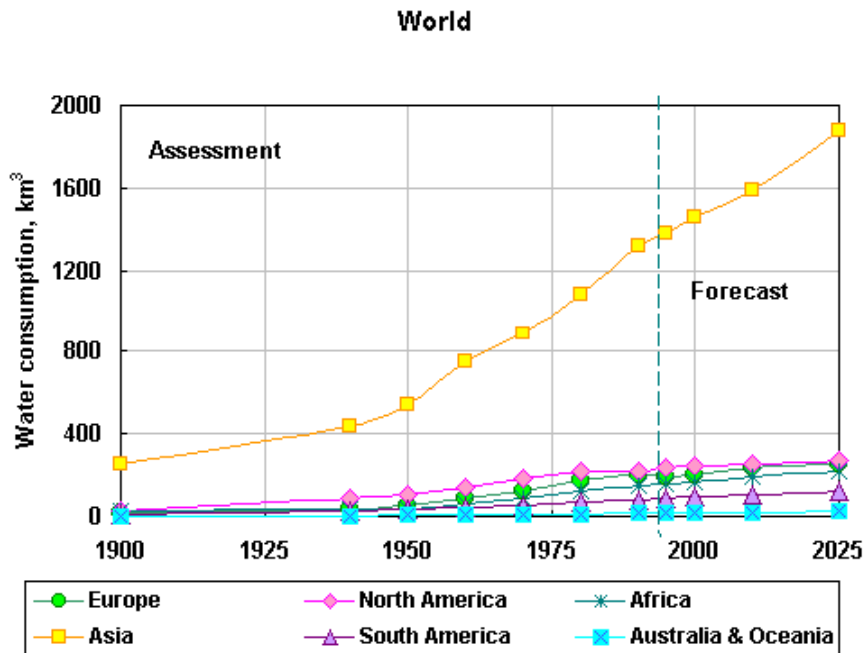
Growing Demand for Water

Although nearly 80% of the Earth is comprised of water, only 3% of it is fresh and accessible, says the [Natural Resources Conservation Center](#). Of that 3%, only 1% is available for consumption. The remaining fresh-water supplies are frozen

in glaciers, or divided among industry, agriculture and domestic uses. According to the United Nations, 20% of the supply is used by industry and 70% is used by agriculture, leaving only 10% for domestic use.

Over the past century, domestic demands for water have increased significantly (see Table 1). According to the Sustainable Asset Management group, fresh-water consumption has doubled since World War II. By 2030, the group estimates that fresh-water consumption will increase another 25%. Similarly, as the world population increases, more water is required. By 2050, the world's population is predicted to increase from 6 billion to about 9 billion, says the [United Nations](#). With this dramatic increase, the demand for water to feed and sustain the global population is estimated to double. At the same time, it is predicted that half of the population will live in “water-stressed” countries, where both quantity and quality of water will reach “economically crippling” levels.¹

Table 1: World Water Consumption

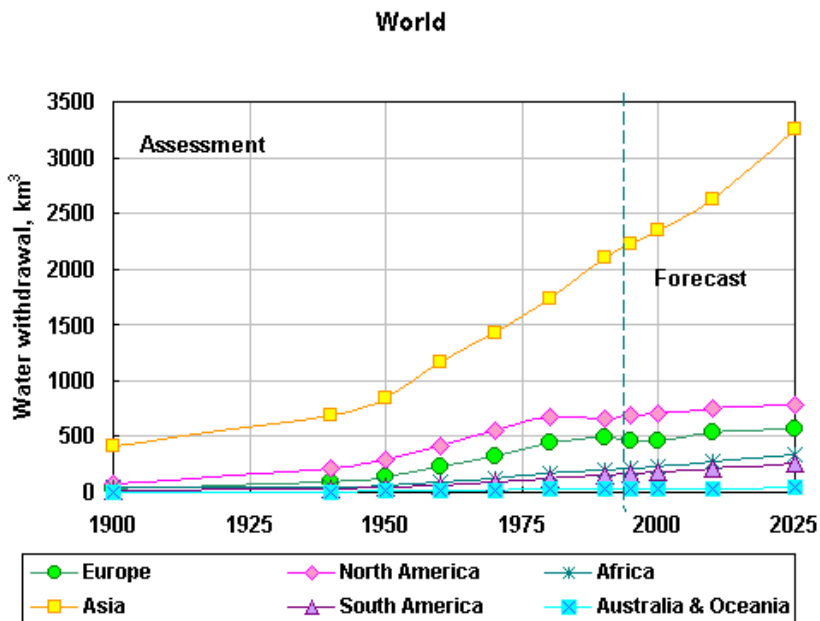


(Source: [UNESCO](#))

Water is either directly or indirectly needed for the production of many goods and services. Agriculture is the largest consumer of water, using approximately two-thirds of the global fresh-water supply. Currently, about 15% of all cultivated lands are irrigated and around 70% of extracted water is consumed in this

process. Similarly, thermal and atomic power stations require large amounts of cooling water. In 2000, both industries were responsible for 10% of water consumption, which is not available for further use, and 20% of water withdrawal, which can be returned to water bodies to be reused. In the future, it is predicted that both water consumption and withdrawal will increase (see Tables 1 and 2).

Table 2: World Water Withdrawal



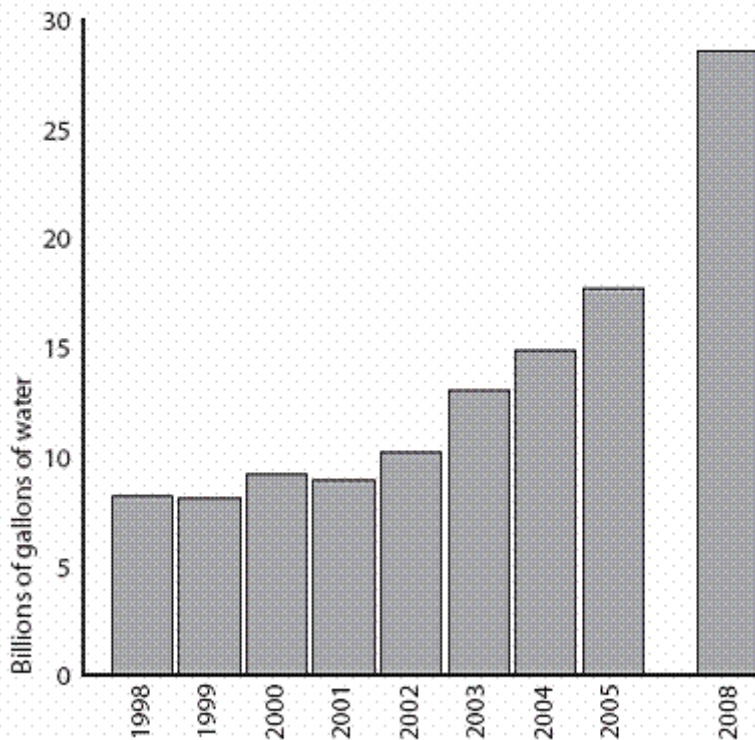
Source: [UNESCO](#)

Increased ethanol production also affects the world's water supply. In 2007, there were 150 ethanol plants in the US and 60 more under construction, making it the fastest growing energy industry in the world.² At the most basic level, corn-based ethanol plants consume four gallons of water to produce each gallon of fuel, says [David Pimentel](#), an ecology professor at Cornell University. But those four gallons only represent the use of water in end-stage ethanol production. Ethanol is derived from the sugars in corn. When you include the water needed to grow the corn, Pimentel estimates that one gallon of ethanol actually requires 1700 gallons of water. For example, in Nebraska, one of America's leading corn producers, 2 billion gallons of water were required to produce 676 million gallons of ethanol.³ According to the [Institute for Agriculture and Trade Policy](#) (IATP),

there are no publicly available records on water use by ethanol plants in US. The projected relationship between ethanol production and water consumption is shown in Table 3 below.

Table 3

Figure 2. Ethanol's estimated national water consumption



Source: [IATP](#)

While many believe that we are experiencing a global water crisis, others predict that the crisis will affect only specific geographic areas. According to [Shiklomanov and Rodda](#), authors of the report "World Water Resources at the Beginning of the 21st Century," water scarcity varies between different world regions. To measure water scarcity, they compared water use with the renewable water resources of surface water. They found that global water withdrawal was not very high, amounting to only 8.4% of global water resources in 1995. However, since water is distributed unevenly, Asia and Africa experience the greatest variation of withdrawal. For example, 95% of North Africa's water resources are withdrawn. Water consumption is significantly lower, as Shiklomanov and Rodda estimate that less than 10% of water resources will be withdrawn by 2025.



Water-related ETFs and Mutual Funds

We identified four ETFs and two actively managed mutual funds with water-related investing themes.

PowerShares' Water Resource Portfolio (PHO) is the largest of the four ETFs, with a \$2.3 billion market value, and tracks the Palisades Water Index, "a group of companies that focus on the provision of potable water, the treatment of water, and the technology and services that are directly related to water consumption." About three-quarters of the fund is invested in industrial stocks related to the water industry, and the fund is classified by Morningstar as mid-cap growth. It has an expense ratio of 0.64%. PHO is the only water-related fund with significant holdings among the Most Popular Funds in the Advisor Perspectives universe. It is held in 45 accounts by 26 advisors and ranks 383rd among US equity funds, and 36th among mid-cap blend funds.

First Trust's ISE Water Index (FIW) has a \$43 million market value and tracks the ISE Water Index, a "modified market capitalization-weighted index comprised of exchange-listed companies that derive a substantial portion of their revenues from the potable and wastewater industry." About 63% of the fund is in industrials and 23% in utilities. It is classified by Morningstar as small cap growth. Claymore S&P's Global Water Index (CGW) has a \$358 million market value, and tracks the S&P Global Water Index. It has a 42% exposure to industrials and 34% to utilities. It is classified by Morningstar as mid-cap blend and has an expense ratio of 0.72%.

PowererShares has a new water-related ETF, the PowerShares Global Water (PIO), which has a market value of \$382 million and an expense ratio of 0.75%. It is based on the Palisades Global Water Index.

The Kinetics Water Infrastructure fund (KWIX) is a small cap blend actively managed mutual fund with a \$26 million market value, currently holding 22.5% in cash, and approximately 40% of the invested portfolio in industrial materials and 33% in utilities. It has an expense ratio of 1.74%. Its charter is to invest in securities in the water infrastructure and natural resource sector globally, and it is sub-advised by Aqua Terra Asset Management, a three year old firm specializing in water-related investing.

The PFW Water fund (PFWAX) is an \$18 million mid-cap growth actively managed mutual fund targeting water-related infrastructure. It has 48% of the portfolio invested in industrial materials, 20% in utilities, and 12% in healthcare. It has an expense ratio of 1.51%. This fund has a track record of nearly 10 years,



but for most of its history it was a traditional growth fund. It was restructured in June of 2008 as a water-based fund.

Advisors considering these funds face one common issue. Most companies focused on water-related technologies are small-cap companies. Large and mid-cap companies, and even many small cap companies, may operate water-related businesses and qualify for investment in these funds, but these businesses are a relatively small part of their portfolio. For example, ITT is a large holding in a number of these funds' portfolios, yet water-related businesses account for only 39% of the ITT's revenues. As a result, these funds must either be positioned as small cap (to be purely focused on water) or be positioned as mid cap and be exposed to non-water-related industries.

Another consideration is the portfolio's exposure to industrials versus utilities. Water utilities may offer a direct exposure to water as a commodity, but these are often regulated industries and offer very different risk/return profiles than private industries. Industries that are developing new technologies for water purification and delivery, especially those targeted to large infrastructure projects, are at the other extreme of the risk/return tradeoff.

Despite the substantial investment required for water-related infrastructure in the coming years, advisors must determine whether the risk and return characteristics of this sector are appealing, relative to other alternatives. It is likely that this investment will be independent of business cycles (water infrastructure will be needed regardless of the stage of the business cycle). However, the absolute size of water infrastructure projects does not constitute a sufficient reason for investment. Many of these projects will be controlled by public utilities and may face significant regulatory hurdles.

The lack of at least three years of historical returns is insufficient to gauge the track record of these funds. Advisors considering these funds will need to perform a level of diligence that will extend to understanding the major constituents of the fund and the manner and extent to which each company derives revenues from water-related opportunities. In the case of the ETFs, advisors will need to understand how the underlying index is constituted and rebalanced, and the criteria for inclusion in the index.

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