Investing in Water
Impact Framework

Water is an irreplaceable part for all known forms of life, providing essential sustenance, enabling energy production and making possible all economic activity. Water consumption has increased at twice the rate of the human population over the last 100 years[1], and global demand for water by 2030 will exceed currently available water supplies by 40%.[2] Existing water resources are stressed, depleted or severely compromised in their ability to continue supporting natural ecosystems and providing for the global population's basic needs.

Sonen's Position

Sonen's water impact investing framework targets three broad outcomes related to water efficiency, water poverty and water restoration.

Outcome One Increased rates of water efficiency and re-use

Outcome Two Reduced water poverty

Outcome Three Protect and restore water resources through natural ecological functions

Outcome One: Increased Water Efficiency and Re-Use

- One-third of utilities around the globe report a loss of more than 40% of clean water due to leaks.[3] Some areas of the US report losses of more than 50% due to leaks.[4]
- Up to 60% of water withdrawn for agriculture can be lost to evaporation, runoff or wasteful application.[5]
- Water reuse reduces energy consumption by eliminating treatment and distribution energy requirements, reduces nutrient loads of treated wastewater released into the ecosystem and reduces diversion from freshwater systems.
- Wastewater treatment plants have an estimated 400 megawatts (MW) of biogas-based electricity generating capacity and approximately 38,000 million Btu per day of thermal energy generating capacity.[6]

1. Increase water efficiency, water quality and rates of re-use

Investment Strategies	Public Markets	Private Markets
» Modernize and rehabilitate infrastructure that reduces inefficiency » Invest in companies that are reducing water use and increasing water efficiency in operations » Strengthen utilities that conserve water use at scale	» Municipal bonds » Service providers for infrastructure needs, including piping, valves, metering equipment » Public utilities with exemplary sustainability performance	» Research and development of technologies that can be adopted at scale (e.g. infrastructure service providers)

2. Support technological solutions that increase efficiency and reduce waste		
Investment Strategies	**Public Markets**	**Private Markets**
» Increase water efficiency in agriculture, the largest consumer of water globally » Treatment technologies that facilitate greater adoption of water re-use practices and ameliorate pollution concerns	» Technology solutions explicitly for agriculture applications and increased water efficiency and domestic pollution » Incremental water savings at consumer and industrial level	» Low cost irrigation technologies especially for smaller producers » Focus on regions with acute water stress » Sustainable agricultural land (organic production, drip irrigation)

3. Strengthen utilities that conserver water use at scale		
Investment Strategies	**Public Markets**	**Private Markets**
» Utilities encourage conservation through rates and incentive programs » Increase re-use of water » Integrate water, wastewater and storm water in design, management and long-term planning	» Utilities that include large-scale water re-use and recycling; explicit programs that encourage conservation » Technologies that enable greater water conservation at municipal level (e.g. end-users)	» Utilities with innovation and experimentation in water savings, water re-use/recycling » Private service providers in water re-use or recycling industry

Outcome Two: Reduce Water Poverty

- By 2050 the world's population will increase by 2.5 billion people, 90% of which will be in Asia and Africa[7] where many lack access to reliable, improved (potable) drinking water due to poor infrastructure and lack of finance.
- In 2012, 11% of the global population (780 million) lacked access to reliable, improved sources of drinking water and 2.5 billion did not have access to proper sanitation.[8]
- Between $3 and $34 of economic return is generated for every $1 spent on water and sanitation.[9]
- Investments in small-scale projects that provide water and basic sanitation could provide Africa with an economic gain of $28 billion annually.[10]
- In Nairobi the poorest residents pay, on average, 5 -7X more per liter of water than an average North American citizen.[11]

1. Increase access to water and sanitation through urban and rural infrastructure		
Investment Strategies	**Public Markets**	**Private Markets**
» Concentrate where population and urbanization trends are greatest and water resources are most stressed » Water infrastructure and distribution schemes where incidence of water poverty are greatest » Focus on low-cost solutions to purification and treatment for widespread adoption	» Utilities where resources are scarce or where population is burgeoning » R&D on low-cost technologies for purification, treatment and expanded access in remote communities	» Access through private market mechanisms, in rural, peri-urban or urban communities globally » R&D on low-cost technologies for purification, treatment and expanded access in remote communities

Outcome Three: Greater Ability to Protect and Restore Water Resources Through Natural Ecological Functions

- Globally, the biggest threat to available freshwater supplies are pollution, contamination and climate change.
- A well-functioning watershed provides water storage, clean water and flood flow mitigation. Loss of biodiversity and degradation of water quality compromises vital ecosystem services, including the supply of clean water.[12]
- Watershed protection costs a fraction of "grey" infrastructure that provides similar functions (e.g. water filtration, wastewater treatment or nutrient cycling).[13]
- Wetlands, lakes, rivers and mangroves support ecosystem services which are vital to agriculture, namely water storage and water quality control.[14]
- Freshwater ecosystems are the most degraded of all ecosystems, with about 50% of wetland water systems being lost during the 20th century.[15]
- Degrading ecological quality reduces strength of natural hydrological cycle and increases humans' vulnerabilities to extreme weather events.

1. Protect and restore land with high conservation value, particularly with water resources

Investment Strategies	Public Markets	Private Markets
» Acquire, protect and restore lands/ watersheds and ecosystems with high conservation value » Entitle land as mitigation banks; engage in water quality trading; transfer of development rights; carbon sequestration	» Green bonds providing resources for climate change adaptation and mitigation, with particularly emphasis on water risk	» Acquire, protect and restore lands/ watersheds and ecosystems with high conservation value » Entitle land as mitigation banks; engage in water quality trading; transfer of development rights; carbon sequestration

2. Conserve freshwater bodies and systems

Investment Strategies	Public Markets	Private Markets
» Strengthen the natural function of land-based ecosystems through conservation and restoration » Invest in drought resiliency, flood protection and reduced risk related to water-related natural disasters	» Green bonds* providing resources for climate change adaptation and mitigation, with particularly emphasis on water risk	» Strengthen the natural function of land-based ecosystems through conservation and restoration with specific, revenue-generating ecological benefits

*The World Bank Green Bond raises funds from fixed income investors to support World Bank lending for eligible projects that seek to mitigate climate change or help affected people adapt to it. Investments in bonds are subject to credit, prepayment, call and interest rate risk. As interest rates rise the value of bond prices will decline. Credit risk refers to the loss in the value of a security based on a default in the payment of principal and/or interest of the security, or the perception of the market of such default.

Guidelines for Water Investing

The following guidelines provide a general outline of the areas in which Sonen will consider and evaluate water-related investments.

Issue	Sonen Position	Exclusion	Limited Exposure	Support Best Practices
Fracking	Investments will not be directly involved in fossil fuel exploration, including hydraulic fracking. Sonen may have limited exposure to companies providing underlying technologies or processes for water purification after fracking operations.	✓		
Desalination	Conservation and improved utilization are investments options that are significantly more sustainable than desalination. Direct investment in desalination operations will be very limited and will take place only where desalination operations are at least partly powered by renewable energy.		✓	
Water Rights and Trading Schemes	As a nascent practice with limited examples of positive water conservation outcomes, Sonen will participate in water trading schemes that can increase conservation that result in water being priced appropriately.		✓	✓
Large-scale projects (e.g. hydropower)	As large-scale projects are not as efficient or cost-effective as basic conservation and improved utilization practices, large-scale hydropower and engineering projects that require significant energy resources, entail ecological compromise, or displace any human populations will be avoided altogether. Where hydropower is pursued, the Hydropower Sustainability Assessment Protocol[16] will be followed:	✓	✓	
Bottled water	No investment in enterprises that provide bottled water for consumers. The amount of gasoline used to produce and transport bottled water in the US alone could fuel a million cars for a year.[17]	✓		
Consumer Products	Maintain a general focus on securities that illustrate reductions in water use from operations and production, as well as for simple consumer-level interventions that reduce water use.			✓
Privatization	Any investment in privatized utilities must exhibit excellent performance along ESG dimensions, exhibit demonstrable improvements in water efficiency, reduce water waste and explore options for increased water re-use and recycling throughout operations.			✓
Corporate Water Use Practices	Shareholder engagement provides an opportunity to influence corporate behavior on water use, particularly heavy users or industries with disproportionate use (utilities, hi tech, etc.) or companies whose operations are in water-scarce regions of the world.			✓

50 Osgood Place
Suite 320
San Francisco, CA 94133
USA

info@sonencapital.com
+1.415.534.4444

For more information, visit
www.sonencapital.com

Endnotes

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Important Disclosure