

Tortoise QuickTake

Water Podcast



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Welcome to the Tortoise QuickTake podcast. Thank you for joining us. Today, senior members of Tortoise provide a timely update on trending topics in the market.

Evan Lang: Welcome to the Tortoise podcast series on the water sector. Thanks for joining us. I am Evan Lang, co-portfolio manager of the Tortoise's actively-managed water strategy. I am joined today by Nick Holmes, my co-PM on the strategy. Recently, Nick was in Singapore to meet with portfolio company management teams and tour several of the country's water infrastructure assets. We wanted to catch up with Nick following the trip to discuss his key takeaways on Singapore's water industry and trends in the global water sector in Asia.

Evan Lang: So Nick, can you tell us a little bit more about what you were doing in Singapore?

Nick Holmes: Absolutely, I spent about four days in Singapore at the Singapore International Water Week, meeting with portfolio company management teams and touring waste water treatment and desalination plants. Singapore Water Week is an event held every two years and is intended to bring together experts and industry leaders to discuss water issues, challenges and solutions. The event really is a great platform for water industry players from across the globe to showcase innovations and share policy developments.

Evan Lang: Singapore is an interesting location for an event, what is unique about Singapore that can draw such a diverse and impressive crowd of water industry players from across the globe?

Nick Holmes: For sure, Singapore is surprisingly a water leader when it comes to water infrastructure and technology. That's more out of necessity than choice. Due to the country's limited natural resources, Singapore has signed an agreement with Malaysia to import up to 250 million gallons of water per day. However, that does not cover all of their demand needs which is currently around 430 million gallons per day, so they have invested significantly over the last 20+ years in water technology and infrastructure to enable water re-use and desalination. Today, NEWater and desalination make up 40% and 30% of Singapore's water supply.

Evan Lang: Interesting, I understand you visited various water infrastructure assets while in Singapore. Can you tell us a little bit about what type of assets you were able to tour?

Nick Holmes: Sure, I was able to tour two desalination plants, several water reclamation plants and a non-revenue water monitoring center. As I mentioned previously, Singapore has invested significantly in the water sector. These assets were very impressive. The first assets we visited were two desalination plants, the country currently has four operating with combined capacity of 130 million gallons per day that can meet up to 30% of current water demand. Next, we visited several water reclamation plants. The plants we visited are able to produce high-grade water from treated used water that is further purified using advanced membrane technologies and UV disinfection making it ultra-clean and safe to drink. They call this NEWater. It currently supplies 40% of Singapore's water today. I will admit the first time I was handed a bottle of NEWater I was hesitant, however it is potable water just like the water here in the U.S. that comes out of the tap. I could tell no difference from the other bottles of water I had in Singapore!

Evan Lang: That's fascinating. 40% of their water supply comes from re-use. Can you tell us about the remote monitoring center you were able to visit?

Nick Holmes: Absolutely, we visited the offices of a small company called Visenti, which was acquired by Xylem in 2016. Visenti has developed smart water technology that is focused on supporting water utilities in monitoring their infrastructure and optimizing their operations through advanced analytics. Their technology is able to combat non-revenue water, which is

water that has been produced, but lost, before it reaches the end consumer, through real-time leak detection, identification of pipe network assets at risk of failure, meter data analytics and water quality monitoring. Visenti has actually also deployed the largest smart water network platform in the world in Singapore. And this is where many think the future in the water space is headed. That is adopting technology to maximize supply and make demand more efficient to help close the supply gap emerging across the globe.

Evan Lang: Great. Just quickly to wrap up on Singapore, can you discuss the future of Singapore's water sector? From my understanding, demand is set to double by 2060, coincidentally almost exactly in line with their 100 year water import agreement with Malaysia that expires in 2061.

Nick Holmes: Sure thing, the country has plans to continue investing in their water infrastructure to meet the doubling of demand and reduce their reliance on imports from Malaysia. The Public Utility Board or PUB plans to bring on two more desalination plants in the next several years and continue building out their re-use infrastructure in the form of a deep tunnel sewer system and new reclamation plants. In total, they are aiming to supply 85% of their water needs from desal and NEWater by 2060, which would be an amazing feat.

Evan Lang: Great. That's very helpful to understanding the challenges Singapore faces from a water supply standpoint and the methods the country is adopting as they face growing water demand in the future. How do you see their challenges relating to the rest of Asia?

Nick Holmes: Sure, we definitely see a need today for investment across many regions in Asia. The two large drivers of growth we see in the water sector in Asia are China and India. In China we have seen strong government support for investment in the water sector. Specifically, China through its 13th 5-year plan has committed to capping water consumption. They are targeting reducing water consumption by 23% by 2020. They are also developing urban sewage facilities and improving water quality and water treatment. Additionally, China is making investments in desalination plants to help supply the water-scarce northern region of the country. Beneficial for companies operating in the water space in Asia, the Chinese government is promoting adoption of public-private partnerships or the PPP model to develop water and waste water treatment plants. In fact, roughly 1/3rd of all PPPs in China are water-related increasing private investment in the country.

We see similar trends emerging in India as China in terms of needed investment in water infrastructure to meet demands from a growing population and rapid urbanization. Today, roughly 80% of sewage in India is untreated and flows into the country's rivers polluting the main sources of drinking water. The Indian government has implemented an infrastructure development program to curb water pollution. We expect to see significant investment in waste water treatment over the next several decades in the country.

Evan Lang: That's very helpful, it sounds like there will be significant investment in the water space in Asia over the next several years. What portions of the water value chain do you anticipate will benefit from these trends?

Nick Holmes: Sure, we believe the trends we see in Asia will continue on for decades as economic and population growth combined with urbanization in many countries will result in a growing water supply and demand gap over the next several decades. With that in mind, in our portfolio we have been focused on companies that maximize water supply through water loss prevention technologies such as smart meters/smart water networks, water reuse and desalination. We also anticipate companies that focus on improving water efficiency or reducing demand through process and flow control technologies would also benefit from the trends we see emerging in Asia. Lastly we are focused on companies operating in the water and waste water infrastructure segment of the value chain to benefit as much of the water infrastructure in Asia still needs to be built out to connect areas of supply to new demand and improve water quality and reuse opportunities.

As I mentioned above water treatment is a significant area of opportunity due to the contamination in many of the Asian countries water supplies and we see technologies such as membranes and filters to be big beneficiaries of that investment going forward.

Evan Lang: Thanks Nick, that was a very helpful and informational update. I believe we are all out of time for today. We appreciate your insights on the water market.

Nick Holmes: Absolutely, I appreciate the time and for our listeners, thank you for joining us today. Make sure to check back over the following months as we will continue to update you with our thoughts on the global water sector.

Thank you for joining us. And stay tuned for our next cast. Have topics you want covered or other feedback to share? Write us at info@tortoiseadvisors.com.

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