

The real liquidity crisis

Risks and rewards in the water sector

The water sector presents big opportunities for investors. Huge spending increases are needed over the next decade to both address underserved communities and upgrade existing infrastructure. Political uncertainty is arguably the main barrier to attracting the capital needed. We see the strategic approach adopted by China sustaining revenue growth above the sector average. Water is also an increasingly important topic outside its sector. We believe water risks need to be systematically integrated into the investment process.

The water opportunity

The World Bank estimates that delivering the UN's Sustainable Development Goal 6 by 2030 will require over \$100bn of additional capex globally every year, c 40%+ above current spending. Developing countries need to close the projected demand/supply gap in both water and wastewater provision, whereas developed countries (notably the US) urgently need to upgrade existing infrastructure to address losses and improve quality. Tariffs are likely to sustain above-inflation increases to help fund this investment. The sector is also attractive to income funds and the growing pool of capital looking at sustainable and impact strategies.

Play in the water

Investors can gain exposure either indirectly via thematic funds and ETFs or by taking stakes in utilities and equipment suppliers. Policy is arguably the most important determinant of performance, in our view. A favourable regulatory regime has helped US stocks perform well (in general) over the last five years and a Democratic victory in 2020 could accelerate the pace of investment. The impact of tightening regulation and threats to nationalise UK stocks highlight the risks. In an era of rising political uncertainty, China's central government-driven investment plan provides good visibility. We expect companies exposed to this market to outgrow their peers over the long term.

The broader impact of rising water risks

Despite being cited by the World Economic Forum as one of the five biggest threats to global economic and political stability, water risks are often ignored by mainstream investors. Large areas of the world are already experiencing 'water stress' and population growth, urbanisation and climate change are likely to exacerbate these risks. Companies in 'high-risk' sectors such as agriculture, food and beverages, energy and mining disclose material acute financial impacts from droughts and floods. It will be increasingly unconvincing to discount these as 'one-off' events. We believe water risks need to be systematically integrated into the investment process.

Edison themes



15 October 2019

From the street

'Water risk is on the rise globally in terms of quality, quantity and access. Drought and flooding, exacerbated by climate change, are contributing to 'extremely high' water stress for 17 countries, home to 25% of the world's population, according to new data from the World Resources Institute.'

Jade Huang, PM, Calvert Research and Management

'Water utilities in emerging markets are a different kettle of fish to stodgy ones in developed countries. You see a lot more innovation happening in business trying to eliminate the use of water completely from their operations. We invest in China Water Affairs [for instance], which is building a water network connecting homes that have never had running water before.'

Seb Beloe, Head of Research, WHEB Asset Management.

Edison themes

As one of the largest issuer-sponsored research firms, we are known for our bottom-up work on individual stocks. However, our thinking does not stop at the company level. Through our regular dialogue with management teams and investors, we consider the broad themes related to the companies we follow. Edison themes aims to identify the big issues likely to shape company strategy and portfolios in the years ahead.

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Water: A brief primer

Water is a stable resource globally but only a small fraction (2.5%) exists as freshwater and an even smaller proportion (0.025%) is accessible as surface water. This water is unevenly distributed and its availability is neither predictable nor constant over time. Quality is an issue as much as quantity: pollution, either by nitrates, biological material or heavy metals, can further restrict availability.

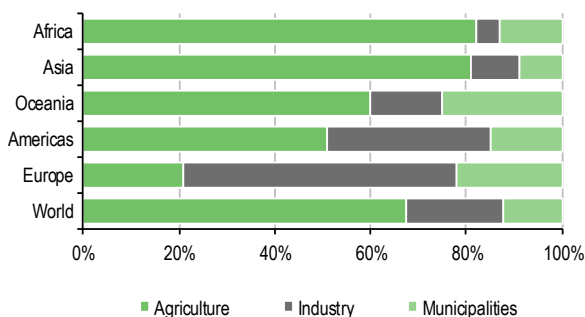
Demand for water is rising globally (c 2% annually), predominantly driven by regions where the population is growing. The amount needed for drinking is just a fraction of this demand. The WHO estimates the average person requires just 2–3 litres/day for drinking. In contrast, residential consumption in developed countries is 100–330 litres/day. Substantial water resources are needed for cooking, washing, cleaning and sanitation. In addition to this, water is consumed ‘indirectly’: embedded in energy and particularly food production. Exhibit 1 highlights that agricultural production accounts for 70% of global consumption. The mix of production also has a material impact on demand. Exhibit 2 highlights that meat has a water footprint orders of magnitude greater than cereals. Rising calorie and meat consumption as countries grow and develop places an upward pressure on water demand.

Shifting patterns of demand and supply are creating both acute and chronic water issues. The UN estimates that 800 million people (10% of the global population) do not currently have access to clean water and a further 3.2 billion (40%+) face severe water shortage at least one month a year. It is estimated by the Water Resources Group that by 2030 global demand for clean water will exceed supply by 40%. Half of the forecast population growth over the next decade is expected to be in Africa, a region with limited surface water resources. Meanwhile rapid urbanisation is leading to acute shortfalls for many cities. China’s industrialisation has driven dramatic increases in both demand and water pollution.

Climate change is expected to exacerbate water issues with higher temperatures leading to both droughts and more intense rainfall (flooding). Many of the biggest challenges posed by climate change will ultimately manifest as water issues.

In 2015 the UN set out its ambition to tackle water issues in its 17 Sustainable Development Goals. SDG 6 aims to deliver universal access to clean, affordable drinking water and sanitation by 2030. However, water issues are often highly location specific. The fact they are also usually intertwined with wider social/political problems and often require expensive infrastructure-based solutions makes this an ambitious target.

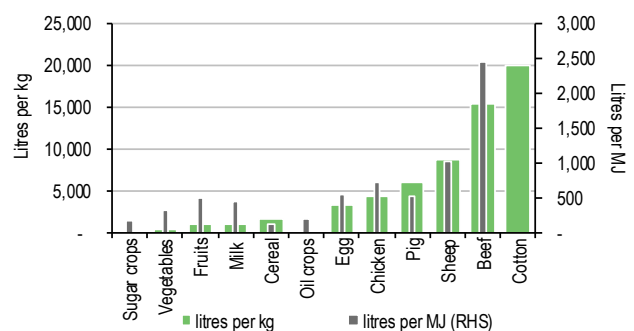
Exhibit 1: Water usage by sector by continent



Source: www.fao.org/nr/water/aquastat/water_use/index.stm

Note: Agricultural demand includes crops grown for export and is based on surface and groundwater withdrawals (ie ignores rain-fed consumption). Industrial demand is typically driven by energy (c 12% of global consumption) and mining. Water used for drinking is part of municipal water demand.

Exhibit 2: Water intensity of agricultural produce



Source: Edison adapted from data from Mekonnen and Hoekstra 2010 <https://waterfootprint.org/en/water-footprint/product-water-footprint/water-footprint-crop-and-animal-products/> (food) and cotton from WWF www.worldwildlife.org/industries/cotton

Implications for investors: Water risk is rising

Water risks are often ignored by mainstream investors despite being persistently cited as one of the top five threats to global economic and political stability by the World Economic Forum. Typically, they are perceived as long-term issues. Their complexity and location-specific nature makes them difficult to assess and integrate into the investment process. This perception overlooks the evidence of their potentially acute impact on financial performance. The food and beverages sector, which is heavily dependent on water for production, highlights the effect of physical risks. Persistent flooding in the US in spring 2019 prevented crop planting, driving up crop (input) prices for feedstock suppliers such as Tyson Foods, Sanderson Farms and Pilgrim's Pride. Global grain trader and food processor Archer Daniels reported an 'unfavourable weather impact' of \$65m in Q219 due to processing plant downtime and shipping delays. Drought in Argentina and large areas of Europe during summer 2018 had a similar impact. It was cited as the main cause of a \$16m (19%) decline in Pilgrim's Pride Q318 operating profit and the largest quarterly operating loss in Suedzucker's sugar segment in 10 years.

Exhibit 3: Water risks facing investors

Physical	Regulatory/legal	Social/reputational
1) Extreme volumes (drought and/or flooding)	1) Unexpected changes to sourcing/treatment policy	1) Community blocking of current/planned operations
2) Increasing competition for supply	2) Abrupt increases in tariffs	2) Human 'right to water' and sanitation violations
3) Declining supply (surface/ground/snowpack)	3) Fines or enforcement actions	3) Customer/workforce perception
4) Deteriorating quality	4) Poor management plans and enforcement	
5) Ageing or inadequate infrastructure		
6) Reduced biodiversity		
7) Increasing variability (incl. temperature changes)		

Source: Adapted from Ceres

Other sectors are also seeing increasing impacts. Water is a critical input to extractive and energy industries. Academic analysis of production data highlights how a drought between 2011 and 2015 had a significant impact on both output and the cost of oil production in Texas. Biofuel production (even more water intensive – see Exhibit 2) in the same region was also affected. Water risks can also be regulatory. Drought led to the introduction of water use restrictions in Athabasca, Canada, in 2015. Fears of the impact on community water resources, both pollution and quantity, forced BHP and Antofagasta to invest in costly desalination technology to expand copper production in Chile in 2015; Newmont faced delays to its \$5bn Conga gold mine for similar reasons. Recent high-profile disasters and subsequent litigation have made controlling wastewater output an increasing imperative for producers. The summer heatwave of 2018 led to a lack of adequate cooling water and forced EDF to temporarily shut down four nuclear reactors in France.

Arguably more important, although more difficult to measure, is the broad-based economic disruption. A three-year drought between 2015 and 2018 forced Cape Town's local government to limit residential usage to 50 litres/day (a quarter of pre-drought levels) and cut industrial consumption by 45%. Closure of swimming pools and restrictions for hotel guests had a lingering effect on tourism (c 7% of GDP). Mexico City, Chennai, Jakarta and Sao Paulo face similar long-term challenges in meeting water demand. It is not just about volume; water quality issues can have equally big effects. Heavy metal pollution of China's river and groundwater is believed to have huge health, environmental and economic costs (limiting agricultural production raises imports). The health risks associated with lead in US water networks are believed to have large economic costs.

Integrating water risk into the investment process

These datapoints are not comprehensive but illustrate, in our view, the need for investors to integrate water risks systematically into their decision making. In 2015 Ceres, a not for profit organisation focusing on encouraging investors to address sustainability, launched an Investor Water Toolkit, a methodology for assessing water risk by company, sector and portfolio.

Exhibit 4: Integrating water risks into the investment process

Level of Integration	Potential measures required
1. Assessing corporate risk	Understanding water dependency risk. Analysis of intensity of production, location-specific resource security (among other factors) Integrating scientific/academic knowledge Assessing management's understanding/response to risks Apply a shadow water price
2. Integrating into decision process	Negative screening: analysis suggests material risks to absolute or relative performance Positive screening: 'best of breed' approach to water risks an indicator of good governance Alpha: analysis indicates material, near term ('actionable') risk or opportunity Activism: highlights areas where corporate disclosure, practice or strategy can be improved
3. Full portfolio integration	Standardised assessment approach and integration across products A systematic understanding of water risks across a portfolio Integrating into strategic decisions Thematic products and marketing to external investors

Source: Adapted from Ceres

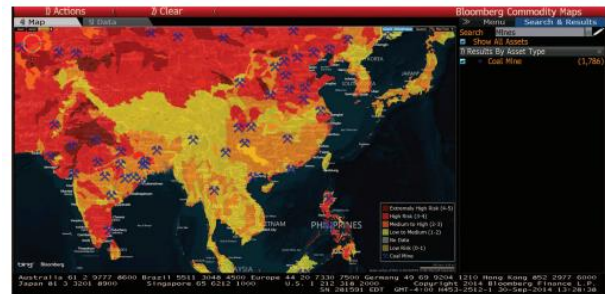
Exhibit 4 hints at the size and complexity of the task. Typically, investors embark on the journey by prioritising large, high-risk sectors that rely on access to clean water as part of their production processes. Ceres's sector analysis in 2017 classified over 20% of the market capitalisation of US and global indices as 'high risk' including oil and gas, chemicals, food and beverages and energy (Exhibit 5). This analysis can be extended to the sector value chain by looking at water risks at both suppliers and product users to provide a more comprehensive 'lifecycle' assessment.

Exhibit 5: Water risk 'heat map'



Source: Florida SBA's \$15bn passive portfolio. Note: Red = high risk, black = medium and green = low. The squares are proportional to the size of holdings. www.ceres.org/node/2308

Exhibit 6: Mining assets and high-water risk



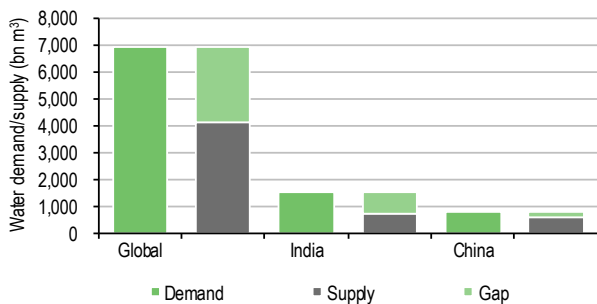
Source: Adapted from Ceres. Risk map from Aqueduct (WRI)

Assessing company-level water risk requires more detailed disclosure. In 2018 the carbon disclosure project (CDP) collected data on over 2,000 companies about their efforts to manage freshwater resources. The survey assesses metrics like the presence of facility level measurement, whether water risk assessments are undertaken and the extent to which they are explicitly integrated with strategy and management objectives. Increasingly granular data enables water consumption over time, by location and per unit of output to be tracked and investors to benchmark intensity against peers/sector averages. This data can be fed into positive and negative screening strategies or mapped against location specific water risks to enable climate scenarios to be run and value-at-risk (VaR) calculated (Exhibit 6). It can also be used to drive engagement, activism and impact strategies. Nevertheless, doing this consistently is hard. While disclosure is improving (the number of CDP responders rose from 1,400 in 2016 to 2,146 in 2018), the 2018 response rate was just 42%. Within the responders, only 59% stated they regularly monitor and manage water across facilities and only 26% had targets to reduce consumption (ie 25% and 11% of all potential respondents, respectively). The problem is not just limited data, however. An analysis of 20 large Dutch investors by Hogeboom et al in 2018 highlighted that while nearly all had stated policies on including water sustainability in their investment process, only a third actually analysed water use and only two considered supply chain risks. There appears to be a big gap in most asset managers between stated policies that acknowledge the risk and putting in place practical actions to measure and mitigate that risk.

Water also presents opportunities

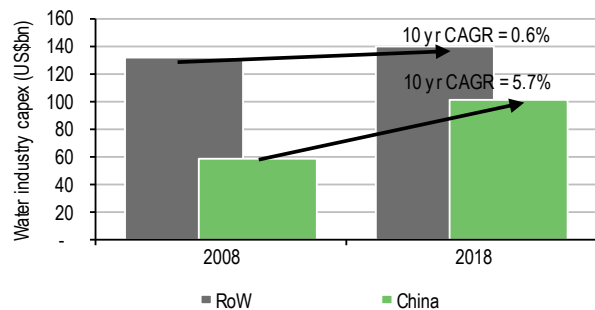
Water issues also potentially present a big opportunity for investors in our view. Many (but not all) the physical risks highlighted in Exhibit 4 can be addressed with increased capital spending. The World Bank estimates that the incremental annual investment needed to deliver SDG 6 is over \$100bn, 40%+ above the current rate. Closing the projected gap between global demand and supply requires new infrastructure in developing countries, while developed countries (notably the US) urgently require upgrades to improve wastewater treatment and cut leakages. Election of a Democratic president in 2020 the US may lead to the implementation of a Green New Deal that promises to tackle underinvestment and guarantee ‘universal access to clean water’. Analysis of global water and wastewater tariffs by Impax Asset Management (2011–15) highlights sustained above inflation rises in water tariffs (3.3% and 4.8%, respectively, vs CPI of 2.1%). All these upward pressures on spending are the reasons many analysts characterise the long-term fundamentals of the water market as ‘compelling’.

Exhibit 7: The demand supply gap by 2030



Source: Water Resources Group

Exhibit 8: Growth in global infrastructure spending



Source: Adapted by Edison from RobecoSAM, *Water: the market of the future*

There is little evidence that these factors are driving an acceleration in spending so far. With the notable exception of China (discussed in more detail below), global water capex has sustained a sedate 0.6% CAGR over the last decade (Exhibit 8). Neither consumers nor the public sector appears willing to bear the substantial funding costs of large, multi-year infrastructure projects.

Attracting private capital, exclusively motivated by the need to make a financial return, to fund the gap is not straightforward. Countries with the most acute need are often those with less well-developed economies and consequently with the least ability to pay. The World Bank estimates the capital investment required by some African states to be 2% of GDP, 6–7x more than the share required by other regions. With investment returns typically running well beyond 10 years, unstable political environments are seen as particularly risky. Investors in water must confront the paradox of a valuable commodity that cannot be priced at a ‘market’ rate for political, social and ethical reasons. Scope to raise prices in India, a market with a population of 1.3 billion, with a large (and growing) supply shortfall and where tariffs are low, is constrained by the ability of consumers and farmers to pay. Equally the demand for (typically short-term) financial returns is often cited as the cause of, rather than the solution to, water issues. The recent record (£126m) pollution fine incurred by Southern Water in the UK was widely seen as a direct consequence of its cost cutting. Perception of an industry maximising dividends at the expense of customers, investment and environmental outcomes has led to calls for nationalisation in the UK. The forthcoming regulatory pricing review (PR19) is likely to be much stricter. More patient development capital has a role bridging state and private funding but is unlikely to be sufficient in isolation (annual development bank financing in water was about \$20bn in 2015).

Infrastructure projects are highly suitable for debt financing. It is estimated that annual private sector infrastructure debt financing in the water sector ranges from \$17–40bn. However, the vast

majority of this is directed to projects in developed countries. The rapid rise in green/climate bonds (over \$200bn issued in 2018) combined with tax incentives and explicit environmental goals could prove to be potentially significant. However, as formal 'use the proceeds' requirements were only adopted in May 2018, few water-specific green bonds have been issued to date. Environmental Finance estimates just over \$3bn sustainable water management green bonds have been issued in the US in 2019 so far.

The difficulty in attracting financing from traditional capital markets has fuelled the search for alternative, more innovative solutions to water issues. Demand side actions such as drip irrigation and price rises can encourage efficiency. Smaller, decentralised (pre-packaged) wastewater treatment solutions can offer more cost-effective solutions in areas of acute need while avoiding the need for 'hard' infrastructure. They can be quick to assemble, are easy to maintain and can respond flexibly to changes in demand. 'Nature-based' solutions, replanting upland catchments or reinstating wetlands, are not suitable everywhere but can be highly effective, cost-efficient ways to reduce flood risk and improve water quality.

How to play the water theme

For equity investors attracted by the water theme, a range of vehicles are available. Many fund managers have now launched thematic water products. Some, like Pictet Water, exclusively focus on capital growth, others incorporate (non-financial) objectives and aim to be 'sustainable' (eg Fidelity - Water and Waste), while others have explicit impact mandates (Impax – Water Resources). For investors seeking to minimise management fees there are also an increasing range of ETFs. Assessing the (gross) performance of a small sample of these funds, most have sustained an average annual growth rate of over 6% over the last five years, with managed funds achieving over 10% (see Exhibit 9).

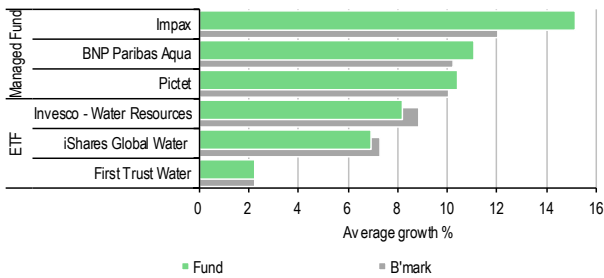
Investors can also take direct stakes in companies targeting the water sector. We have identified over 50 companies with a combined market capitalisation of over \$250bn that generate a significant proportion of their revenues from water and associated businesses. These can be divided into two broad types:

- utilities providing water services – the supply of drinking water and the removal and treatment of wastewater; and
- industrials – a diverse group of companies supplying hardware systems (pumps, valves, etc), engineering and consulting or infrastructure to service providers. These suppliers can be diversified across other sectors.

In general utilities provide stable, recurring revenue streams, often with high dividend yields but where growth and returns are largely determined by the regulatory environment. US policies designed to encourage investment have been broadly favourable to US players. American Water (AWK), a \$22bn supplier of water and wastewater treatment services to 14 million residential customers across multiple states, features prominently in many of the water funds. It has delivered an adjusted EPS and dividend CAGR of 8.3% and 10.3%, respectively, over the last four years. This performance has been primarily driven by the expansion of its regulatory asset base (through a combination of capital investment and acquisitions) and has resulted in a share price that has risen 140% in the last five years. It expects to sustain a 7–10% EPS CAGR over the next four years. Aqua America (WTR), another large (\$10bn) US water and wastewater treatment company, has nearly doubled its share price over the last five years.

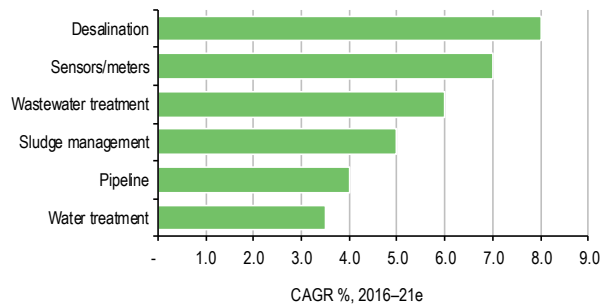
Regulatory trends may not always be positive for water utilities. A new US president may aim to accelerate investment but this may, for example, be accompanied by more stringent regulation on water quality or permitted price increases that will reduce returns. The fate of the UK water companies discussed above highlights the risks. The shares of all three (United Utilities, Severn Trent and Pennon) remain below the prices at the 2017 general election.

Exhibit 9: Gross five-year performance of water funds



Source: Fund Factsheets, Refinitiv

Exhibit 10: Forecast growth rates by product category



Source: Impax, Frost and Sullivan, Edison Investment Research

Industrial companies focused on the water market tend to be more volatile, with less revenue visibility but generally faster organic growth rates driven by both product (Exhibit 10) and country market exposure. Xylem (XYL, \$14bn) is one of the largest pure plays. It sells a broad range of equipment (including water pumps, filtration systems and meters) predominantly direct to water utilities and other industrial customers (50% and 35% of its 2018 revenues, respectively). Between 2016 and 2018 revenues rose 38%, reflecting a 5% organic CAGR plus acquisitions of smart meter and analytic companies. Its organic growth is being driven by rising utility spending in the US, including smart meters and sensors (see Exhibit 10), as well as growth in China and the US. Xylem's share price has risen by 120% over the last five years and the company is targeting revenue growth of 4–6% and an adjusted EBIT margin of 17–18% in 2020.

Danaher (DHL, \$100bn) is a prominent industrial company supplying water utilities, and its share price has risen 140% over the last five years. While it is a core holding of many water funds, its 'Water Quality' segment is just 12% of sales. Ecolab (ECL, \$55bn), another strong performer over recent years, is similarly diversified. Its water business is focused on industrial water treatment and aims to grow revenues 6–8% annually but is just part of its industrial segment (c 50% of sales).

Desalination is one subsegment that offers particularly strong growth in our view (see Exhibit 10). Partly due to the uptake of reverse osmosis (RO), energy consumption has reduced dramatically over the last decade. While it remains more expensive than supplying drinking water from surface or groundwater sources, it is increasingly viable for coastal and island communities where there are no easy alternatives. AquaVenture (WAAS) is a purely water focused business listed in 2016 and capitalised at \$560m. Its Seven Seas Water business owns and operates 11 desalination facilities.

The desalination market also highlights the shift towards decentralised solutions. These can offer rapid, flexible solutions in areas of acute need while avoiding the need for costly infrastructure. Fluence (FLC, A\$266m) is aiming to address this trend through its Nirobox (desalination) and MABR (wastewater treatment) technologies.

Finally, it is possible to invest in water indirectly. Water availability already heavily influences both the value of agricultural land and the viability of any natural resource extraction project. We believe its importance to these sectors will continue to increase over time.

This analysis has sought to identify the characteristics that have driven strong financial and share price performance of selected water investment vehicles over the last five years. For the industrial players, exposure to fast-growing markets and technology subsegments seems important but most are diversified and their performance will be influenced by trends outside the water sector. For the utilities, exposure to political and regulatory environments that are supportive of increased capital investment in water infrastructure are important factors. Although the US has provided a favourable policy backdrop in recent years and investment may accelerate post 2020, the forthcoming election does add considerable political uncertainty. In our view the strategic approach to fixing water issues adopted by China offers better visibility on sustained long-term growth.

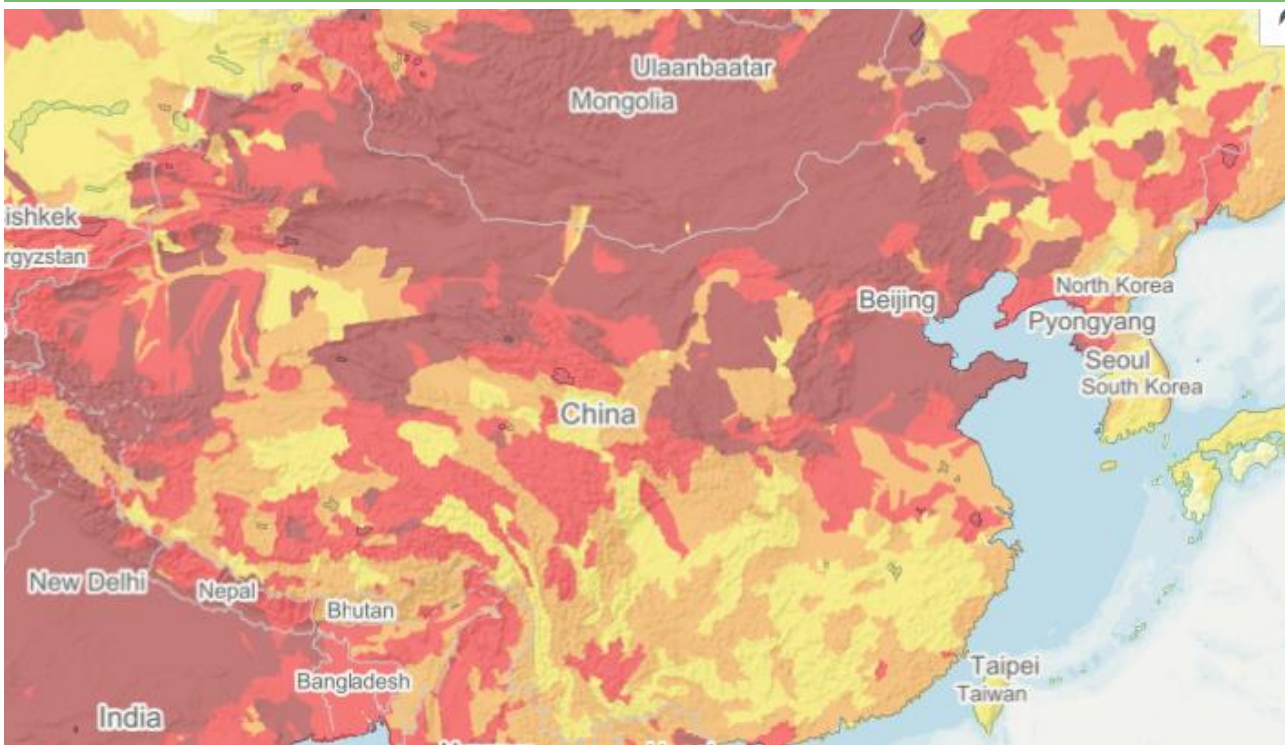
The Chinese water market

To highlight the potential of the Chinese market in greater detail, we provide an overview of the market, the numerous water challenges it faces and the policy backdrop.

The UN classifies China as one of the 13 countries in the world with a water shortage, with figures from the Chinese National Bureau of Statistics stating that per capita freshwater resources of 2,355m³ (in 2016) were approximately one-third of the global average. Increasing demand from rapid economic growth and urbanisation is only likely to make matters worse in the absence of policy action. The 2030 Water Resource Group projects that in a 'business as usual scenario', the deficit of water will be 199bn m³ by 2030.

The scarcity of water resources does not however tell the whole story. China also suffers from significant regional disparity of resources, with relatively abundant supplies in the south, but severe shortages in northern and some eastern areas (see Exhibit 11). For example, the north region of China has 47% of the population but only 16% of the water supply. As a result, of the 11 regions that are classified as 'dry', eight are located in northern China. According to China Water Affairs, more than 400 of 660 Chinese cities suffer from a water shortage.

Exhibit 11: Mapping China's 'overall water risk'



Source: WRI Aqueduct. Note: Darker shades indicate areas of higher risk with dark red = 'extreme risk'. Overall water risk is defined as all water-related risks, aggregating all selected indicators from physical quantity, quality and regulatory and reputational risk categories.

The problem of scarce water resources is compounded by the relative cheapness of water. Tariffs are currently set at a low level compared to other major industrialised nations, with only India's tariffs below those of China. The average cost is c 1% of disposable income compared to a global average of between 3% and 5%. The relative cheapness of water does not encourage efficiency in the use of what is, in China, a scarce resource and current consumption is c 5.5x the global average when calculated on a unit/GDP basis.

As a result of the discharge of untreated or under-treated wastewater back into the water course, the quality of much of the water is also poor. In part, this can be attributed to the low penetration of urban and rural wastewater treatment plants in China. According to the National Development and Reform Commission (NDRC), in 2015 over 30% of China's seven major river systems fell below the

expected standard (that is below grade III – ie non-drinkable). As a result of the poor quality of drinking water, China is currently a significant consumer of bottled water.

Government initiatives provide framework for growth

The Chinese government has brought forward a number of policy initiatives and interventions to rectify the availability and quality issues.

The regional imbalances are to be addressed by the South-to-North Water Diversion Project, which, when operational, will be capable of transferring up to 44.8bn m³ of water annually from the south to the north via three routes. The project is scheduled for completion by 2050.

The PRC's 13th Five-Year Plan (2016–2020) for the Construction of Urban Wastewater Treatment and Recycling Facilities envisages total government expenditure of RMB560bn, 30% higher than in the 12th Five-Year Plan. Government expenditure is only expected to account for a small proportion of overall expenditure; local government and private funding sources will contribute the rest. Much of the expenditure will be focused on the installation of new sewage pipelines and new sewage treatment plants, but the intention is also to upgrade existing plants and pipes. Under the Five-Year Plan, urban sewage treatment capacity is targeted to reach 201m m³/day, an increase of c 40m m³/day.

The Water Pollution Prevention and Control Action Plan of 2015, known as the 'Water 10 Plan', established 10 general water resource and quality measures (including over 200 specific actions). Among the most important objectives are: to reduce the pollution of major rivers so that by 2020 70% of water in each of the seven key rivers will reach at least grade III; 93% of urban drinking water to be above grade III; and the elimination of grade V+ water in the Yangtze and Pearl river deltas. The Plan establishes stricter environmental supervision and imposes more stringent control on polluters. It also targets water usage, with an ambition of ensuring consumption remains below 670bn m³.

Edison clients

This note aims to highlight the opportunities for investors in the water sector and identify some of the themes that might drive outperformance. It also seeks to identify the main risks these companies face and the impact water issues are having across the broader investment universe. We have three clients focused on the water sector:

China Water Affairs (CWA)

The favourable macro backdrop has helped China Water Affairs (CWA) deliver rapid growth for shareholders, with CAGR in EPS of 27% and DPS of 33% (2013–19). Its strategy is to continue to pursue growth opportunities in its core business, which is focused on the Chinese water market, where it supplies c 22 million people in 60 cities and 13 provinces and three municipal cities of China. In addition, CWA will seek to increase the scale of its Environmental Protection and Direct Drinking Water businesses. Growth will be achieved by expanding existing capacity and volumes, from efficiency improvements and by the pursuit of tariff increases and acquisitions, such as that of Kangda International, which it acquired earlier this year. CWA will fund this growth via a combination of balance sheet resources, an existing multi-channel funding programme and disposals from the non-core property business.

Fluence (FLC)

Fluence is a global supplier of water and wastewater treatment solutions. Its containerised ('decentralised') products provide municipal customers with 'plug and play' solutions that are both quicker to deploy and substantially cheaper than traditional alternatives. It has substantial exposure to China primarily through its Aspiral product, which is based on its proprietary MABR technology and offers a cost-effective way to meet the Chinese government's exacting Class 1A standard. Improving wastewater treatment in underserved rural communities is a priority of the Chinese government's current 13th Five-Year Plan (see [Further progress in China](#)). It also began selling its SUBRE (higher volume wastewater treatment) product in recent months and, outside China, sales of its decentralised desalination product (Nirobox) has also gained considerable traction.

Orège (OREGE)

Orège's proprietary and patented SLG ('Solid, Liquid, Gas') technology reduces sludge treatment costs for utilities by up to 80%, with a strong investment case for clients (payback period <3 years) and large environmental sustainability advantages. We estimate an annual addressable market for SLG technology in North America, UK, Germany and France of over €400m. In July 2019 Orège announced the results of its rights issue (which had been expected as there was a regulatory requirement to recapitalise the company by the end of 2019), with €39.6m subscribed (€33.9m through the conversion of a receivable by Eren Industries and €5.7m in cash), which will be used to strengthen its balance sheet and accelerate commercial development. In particular, funds will be used to finance commercial development in strategic growth countries (United States, United Kingdom, Germany and Japan) and in the development of new waste to energy solutions. SLG offers a technological innovation to a market characterised by well-established and consolidated technologies. Frost & Sullivan estimates the addressable market for the segments Orège addresses generates \$9.5bn revenues pa (excluding services associated with the equipment sale, which we estimate represent 50–100% of the equipment business). Global Water Intelligence estimates the global wastewater market to be growing at 5–6% pa.

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