

Volume 3, Issue 2 | Spring 2022

amane currents

Designing the future of water

In this issue:

Digital in water – a challenge or opportunity?

Opportunities in industrial outsourced water & wastewater services segment

Will Europe accelerate phosphorus recovery from wastewater?

Insights into trends, opportunities and what makes a company great



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Editorial Director William Malarkey bmalarkey@amaneadvisors.com

Managing Editor Ann Seamonds seamonds@seamonds.com

Associate Editor Natalie Peña npena@amaneadvisors.com

Feedback currents@amaneadvisors.com

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WELCOME to Spring 2022 amane currents



Spring has finally arrived and with it, our newest edition of *amane currents*. And just as this season is always filled with the promise of new opportunities, so we, too, are pleased to present a content line-up that is filled with a wide variety of insights and opportunities that should be of interest to current and prospective players in a range of water industry segments.

This issue includes feature articles on topics ranging from thoughts on water industry digitalization, written by our Oxford-based partner Geoff Gage, to the prospects for outsourced services in the industrial water & wastewater segment, authored by our own Avinash Vijay and long-time industry veteran and friend of Amane, Kerry Murphy. In addition, Lamia Moubakir and Dorothee Chabredier from our Paris office have teamed up to explore the state of phosphorus recovery from wastewater in Europe.

We shine the spotlight in this issue on the exciting work of our Middle East team in providing strategic support to the Royal Commission of AIUla on developing the circular economy and resource recovery concepts for the AIUla tourist region in Saudi Arabia. As described by co-authors Christophe Guillet and Aurore Mariot, AIUla is the first UNESCO World Heritage site in Saudi Arabia and plays an important part in Saudi Arabia's "Vision 2030" strategic development framework. The Vision 2030 framework includes a number of objectives including development of tourism in the Kingdom as an alternative to the oil economy and making it one of the Top 5 global tourist destinations in the world.

Our Spring issue also features *amane currents*' first guest interview feature, as Brendan Tierney, Managing Director, Global Head of Water Investment Banking at Raymond James & Associates, shares his insights into significant trends and opportunities in the water industry, and discusses the attributes that he sees as separating the great companies from the good ones.

You will also notice in our New Hires section that Amane Advisors has continued adding new members to our worldwide team. One of the things we hear consistently from candidates is the attractiveness of our company culture, which is characterized by a highly collaborative, one-company environment, a sharp focus on the highest standards of excellence, unflagging commitment to our clients' success, plus a shared passion for the water industry and the environment. These themes bring us all together as they cut across geographies and cultures, as well as the various services and industry sectors that we serve.

We hope you enjoy this issue of *amane currents* and invite you to suggest topics of interest for coverage in future issues. Please feel free to reach out to me with your ideas at bmalarkey@amaneadvisors.com.

Sincerely,



Bill Malarkey





DIGITAL IN WATER: more of a challenge or opportunity?

By Geoff Gage, Partner



As digital transforms how we live our everyday lives and impacts almost every industrial sector, the question for many in the water sector is how best to take advantage of the digital opportunity.

Those already deeply involved in the digital water space across the four main layers of digital — from offering physical sensors, to communication systems, to storing and managing data, to analytical software — are clear on where they can play and the value they bring to customers.

However, for those companies in the water sector who are less digital today and who see more opportunity from digital — for example, water treatment technology hardware suppliers, construction firms or operational service companies — the question of how to “become more digital” is often a tricky one.

It’s easy to understand why companies see opportunities, as there are clear trends making digital solutions easier, cheaper and better than ever before:

- Falling cost of both sensors and data storage, which is >90% cheaper than just a couple of years ago

- More flexible communication choices, from SCADA networks to new standards such as 5G or LoRaWan driven by large telecoms companies, or simple 2G/3G when speed is less critical as the same telcos realise any additional data is incremental revenue
- Increased availability of data, both from physical sensors as well as new sources — such as satellites monitoring vast watersheds as well as individual assets from space, or external datasets on weather
- Increased analytical power, with ever-increasing computer power, greater edge analytics and the ability to rent AI algorithms to apply to your data

Digital desire is also driven by a recognition that investors place a high valuation on recurring revenues. Many see the hoped-for high growth of digital services, with revenues paid in a high-margin, predictable SaaS model with sticky contracts with high renewal rates, as the nirvana of these recurring revenues.



Creating a digital start-up has never been easier. At a recent trade show, I counted 13 start-ups focused on predicting flooding and storm water risks, each with a different twist. More broadly, Amane Advisors has identified over 1,400 digital solutions in the water sector — so “digital water” is a crowded space.

This in turn creates its own challenge. As a consequence of this digital profusion, operators face being overwhelmed with multiple data sources, storage locations, systems, access codes, and screens. This opens up an opportunity for digital integrators, many of whom are not water specialists, increasing the competitive landscape.

So how can specialist water players win against the generalist IT integrators working across multiple sectors?

For the ~80% of the water market in the municipal sector, we see larger and/or more progressive water and wastewater utilities having the capacity and vision to lead the integration of multiple digital solutions. However, for the average utility the main challenges we see are two-fold:

- Having the capacity to lead such projects while also delivering day-to-day service requirements, often when faced with increasing events caused by aging infrastructure
- Identifying and procuring the desired digital solution, when procurement is geared towards buying hardware in a “cheapest of three similar alternatives” model

This leads to a conundrum where digital companies are left frustrated by the slower pace of adoption than they’d like and end up spending more cash than planned on marketing and sales efforts.

In the industrial & commercial sectors, which make up ~20% of the water market, for a company looking to grow their new digital offering the challenge is often how to establish a new relationship with a client, which requires bypassing existing service providers and integrating into well-established existing ERP systems.

These existing service providers often react by offering digital solutions as a defensive move to prevent competitors from gaining access to client sites and contracts. When the use case optimises a service provided by the supplier — for example, reducing over-dosing of chemicals or preventing more expensive reactive maintenance — companies are actually willing to give up short-term value to retain customers longer term.

So digital moves quickly from an upside opportunity to a defensive move.

Across the sector, companies are finding their competitors are likely to already be more advanced — whether it is in in-house development of digital solutions, building partnerships or investments in promising start-ups, or just reinventing their business model to accelerate adoption.

Getting ahead requires earlier investment and bolder plays, especially with the global leaders such as Xylem and Saur accelerating their investment into smart digital solutions such as Valor Water Analytics and Riventa, respectively.

M&A is expensive with “digital” companies typically valued at ~16-18x EBITDA, versus ~12x for “non-digital” companies.

So, despite the many opportunities from digital solutions and the increasing ease of establishing a new digital offer, it still can be very challenging to navigate to a successful, profitable digital model at scale.





INCREASES IN WATER-RELATED COMPLEXITY DRIVING OPPORTUNITY IN THE INDUSTRIAL OUTSOURCED SERVICES SEGMENT: Who will the winners be?

By Avinash Vijay, Project Manager, and Kerry Murphy, Independent Water Sector Consultant

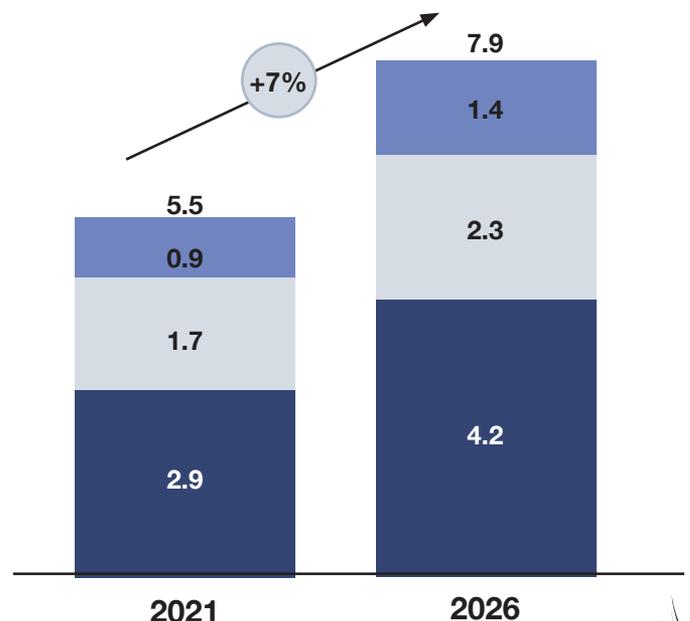


The industrial outsourced water and wastewater services sector (predominantly mobile and Build-Own-Operate models) has experienced significant global growth over the past years, driven by changing client attitude towards involving third parties in their non-core operations and recognizing the value in capital reduction and de-risking operations.

The market is both large and fragmented, increasing in complexity and open to global, regional, and local water treatment players. The yearly global industrial outsourced services market today is estimated to be around \$6 billion (purely revenues to players from industrial end-users). However, growth is dependent on the willingness and the ability of water treatment players to expand and penetrate further in existing end customer sites.

Global market for industrial outsourcing services by contract type (USD Billions)

- Mobile services
- Industrial operations contracts
- Annual industrial BOT/BOO payments (mainly BOO)



History

Industrial businesses are always looking for new ways to improve shareholder value, and outsourcing is often explored to achieve that goal. Outsourcing allows for discrete business activities to be managed by an external entity with specialized expertise, allowing companies to focus on core activities. The goals of reducing operating costs, improving risk management, and exceeding performance requirements are often the drivers of any outsourcing strategy.

Industrial water outsourcing has been an established, albeit small, segment for over 40 years. The business model claims many founders but none more innovative than Lyman Dickerson and the family-owned Ecolochem business headquartered in Norfolk, VA. That team invented emergency mobile water treatment systems and then evolved that customer offering into

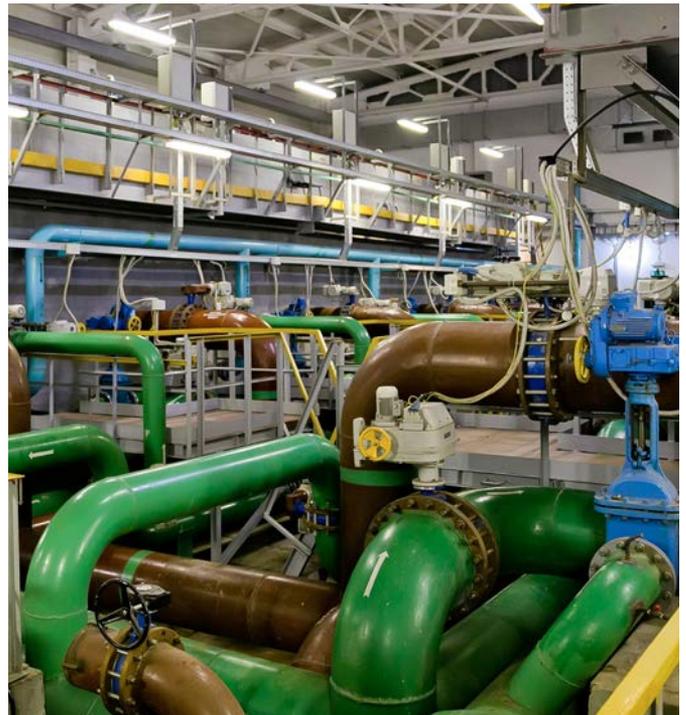
a longer-term Build-Own-Operate (BOO) model as addressable customer needs surfaced. The acquisition of Ecolochem by Ionics in 2004, and the subsequent acquisition of Ionics by GE Water & Process Technologies one year later, were early indicators of the strategic potential in this industrial water services segment.

Many other global suppliers, with and without mobile water infrastructure, have entered the BOO business to address the growing technology, regulatory, scarcity and capital needs of an increasingly diverse industrial base.

There are three key industrial outsourcing services models: mobile water services, industrial Build-Own-Operate, and operations & maintenance.



The goals of reducing operating costs, improving risk management, and exceeding performance requirements are often the drivers of any outsourcing strategy.”



Key industrial outsourcing services models

Mobile Water Services	<ul style="list-style-type: none"> • Water treatment services are delivered to industrial clients in a time-bound rental of trailer/skid mounted or containerized treatment equipment or plants. • Length and cost of the contract varies based on treatment context, technology needed, distance of the unit to the client site. • Payment of treatment services is primarily done per meter cubed of water treatment or a monthly fee. Initially emerged to perform emergency interventions, but also suitable for clients who do not want to commit to acquiring fixed assets for short or uncertain term periods. • Contracts are usually either on emergency or 1-3 months (short-term), 3-6 months (medium-term), 6-12 months (long-term). • If players deploy the treatment system more than 12 months, it's practically a BOO model.
Industrial Build-Own-Operate (BOO)	<ul style="list-style-type: none"> • Water service provider provides a full scope including engineering, procurement, construction, ownership, operations and maintenance of covered systems. • The supplier is paid by the industrial customer for those services on a defined term contract. These contracts are typically based on a fixed capacity payment and a variable off-take payment determined by actual usage. • Most appropriate in cases where assets can easily be separated from the rest of a client's facilities and the client does not need or want to be involved in the daily operations of the treatment facility. • At the end of the contract the assets remain with the developer. If the assets are still required after the end of the contract period, a follow-on agreement can be negotiated. • BOO contracts are attractive to developers because there is a greater scope for increasing profits when the customer re-signs for another term. • With industrial BOO contracts, almost all suppliers enjoy an 80-90% renewal rate.
Operations & Maintenance (O&M)	<ul style="list-style-type: none"> • Water service operator has the responsibility of operating and maintaining an existing treatment plant. • The existing asset may have been built by the same company that has been awarded the contract for the O&M portion, or by a different company. • Regardless, the ownership of the system remains with the industrial end-user.

Client perspective

Mobile and BOO offerings that dominated the industrial outsourcing business in its early days frequently revolved around high purity feedwater makeup for steam generation systems. Although the diverse customer base had many rationales for adopting these models, the key drivers were often treatment complexity, regulatory compliance, and operational risk reduction. These factors remain relevant in today's more mature mobile/BOO markets even as the expansion beyond boiler feedwater into wastewater treatment, reuse, recycle and process water applications accelerates.

Coupled with increasing regulatory pressure on discharges and consumptive use, user-owned and -operated water treatment systems sometimes struggle with premature obsolescence. Engineer, Procure, Construct (EPC) or System Integrator (SI) models will continue to be widely utilized by industrials to meet their needs for brownfield water system projects. However, where increasing technical requirements coincide with declining raw water quality and/or availability, low risk outsourcing models are often a high-speed and attractive alternate solution.

The BOO model fundamentally shifts risk from the industrial user to a qualified, broad scope supplier. The BOO supplier takes ownership over solution design, equipment selection, installation, operation, and related discharge compliance. In many cases, the BOO supplier will also provide emergency or supplemental backup with rapid deploying mobile water treatment systems, which favorably impacts system design and maintenance requirements.

Typical BOO pricing models will include a base fixed charge for the system and a variable charge based on treated water produced or other appropriate consumption metric. The BOO supplier assumes contractual responsibility for meeting water quality/quantity standards, adjusting equipment or staffing as needed, controlling consumables spend, maintaining membrane life and managing the direct, on-site interface with customer senior and operating staffs.



Other customer needs that are evolving now and can be addressed by a BOO offering include:

- Capital cost avoidance
- Access to evolving technology
- Liquid discharge compliance
- Reuse/recycle integration
- Existing asset decapitalization
- Atypical event (e.g., unscheduled outage) planning

The increasing need for reuse/recycle strategies that are fully integrated with the overall plant water balance is driving additional growth in the BOO model. The technology, regulatory compliance and operational pressures on customers are increased by the need for these strategies.

Market trends

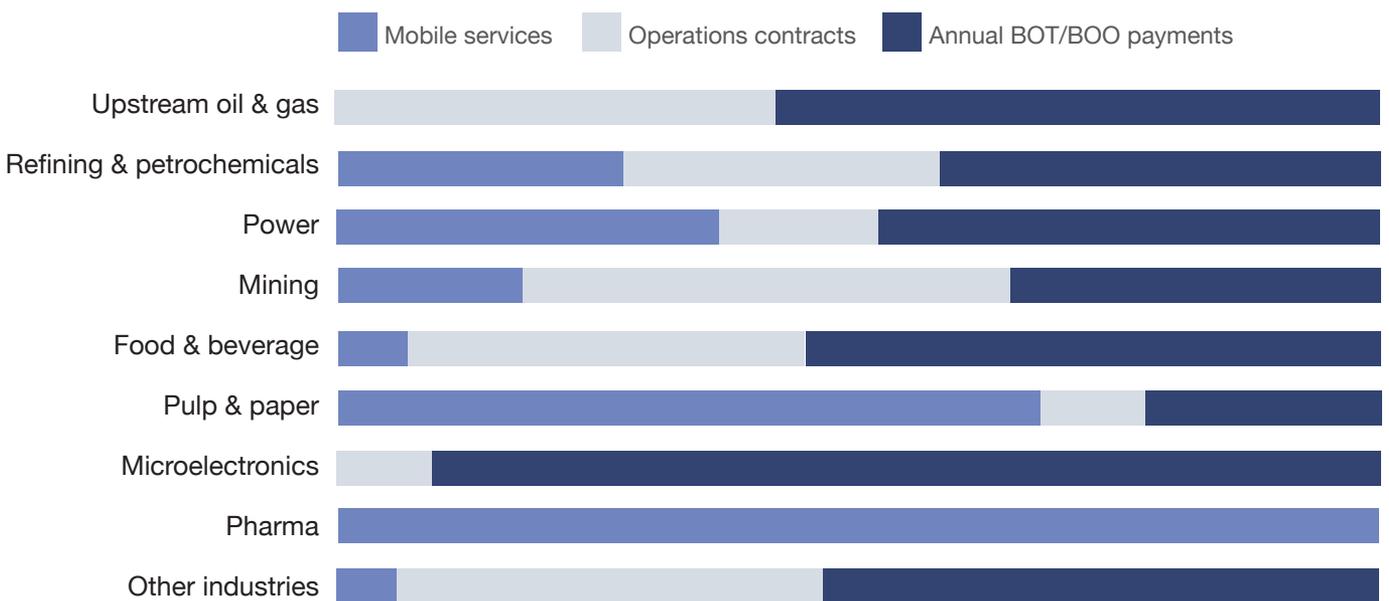
Outsourcing follows complexity in all things, and nowhere is that truer than in the industrial water services segment. The regulatory ratchet, declines in raw water quality and quantity, increasing technical requirements and the need to reduce consumptive use are being felt in all industry sectors, including upstream E&P, refining, power, chemical, food & beverage, pulp & paper, steel, etc.

Traditionally, equipment manufacturers provide equipment, chemical manufacturers provide chemicals, and O&M companies provide operating services. The increasing BOO trend combines all these things in a single contract with a single supplier with clear KPIs, responsibilities and asset ownership. This transition shows no sign of abating, and the nexus of these trends produces consistent and accelerating growth in the BOO business model.

There are regional differences in the market for industrial outsourcing services. North America and Europe are more open to outsourcing, while other regions are in various stages of adoption and development. Differences in overall perception regarding outsourcing continue to drive growth rates as industrial customers evolve in their risk and water management journeys.

North America is the most mature market, followed by Europe. In the Middle East, outsourcing is increasing in popularity as clients are often risk-averse and looking for projects combining a solution and an investment. In Asia, the culture still leans towards wanting to own the assets. The mining industry, especially for desalination and wastewater treatment solutions, presents the biggest opportunity for BOOs in Latin America and Africa.

Share of market of industrial outsourcing services by sector, 2021



How can players capture value from this market?

BOO initiations very rarely occur as a result of a typical RFQ/RFP process. It is much more common for suppliers to launch independent business development processes where and when they identify industrial facilities that are likely to benefit from the BOO model. As noted above, that typically revolves around the specter or reality of complexity. Suppliers who can see that complexity, who are capable of crafting cross-discipline solutions, and who have a local O&M capability can compete in the BOO segment. Of those suppliers, companies that have emergency mobile and containerized solutions capabilities will be advantaged, and those without will find the lack to be a substantial barrier to entry. That barrier may be somewhat mitigated by pre-existing customer relationships, supplier partnerships, and local references.

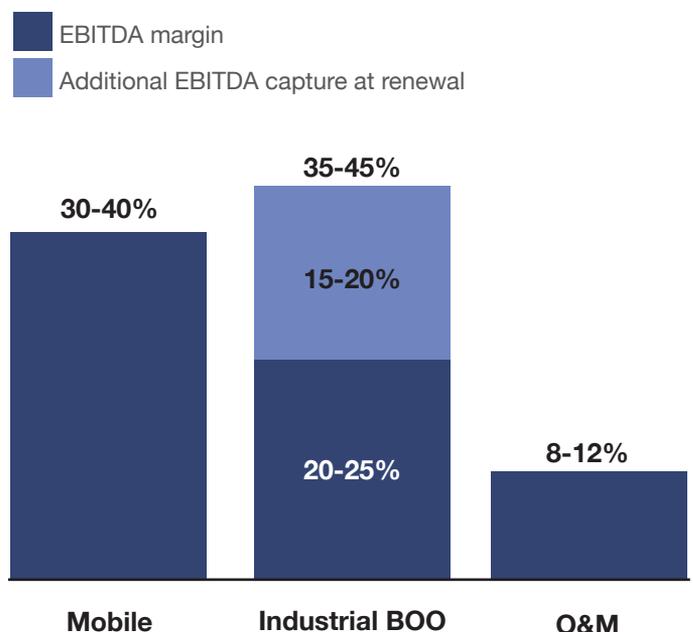
The current global market leaders in the industrial BOO segment include Veolia and Evoqua. Both of those companies acquired critical parts of their BOO capabilities via M&A. Veolia recently acquired most of the SUEZ business including the market-leading mobile provider, while Evoqua inherited the USFilter mobile assets from Veolia via the AEA Investors LP acquisition of Siemens Water Technologies in 2014. Others that compete in the industrial BOO space tend to be mobile or capital equipment suppliers who hire local O&M teams on an as-needed basis. Asset management, service excellence and regulatory compliance can be challenging for smaller competitors, but they add necessary price competition that benefits the segment.

The other type of water treatment companies well poised to succeed in the market are industrial water treatment chemicals players that have the direct relationships with industrial sites and have people on the ground. The purchasing decision-makers for water treatment chemicals and for a solution like mobile/BOO are the site procurement managers or VP of operations. Given that the decision-makers for both these solutions are the same, the value of synergies that can be driven is high. This would require realigning sales processes, incentives, and training of chemical sales staff to sell mobile/BOO services. This business could be very interesting to the likes of Nalco-Ecolab, Solenis and Chemtreat, etc., and these companies have been examining this model over the past several years.

The old SUEZ WTS business, which now sits with Veolia, was a good candidate to drive these synergies as WTS had both a mobile/BOO business and a ~\$1bn industrial water chemicals business (that came from GE WP&T, which previously was the Betz Dearborn business). However, both businesses sat under different divisions; Mobile/BOO was under WTS' Engineered Services division and chemicals, a separate division. While there were discussions to drive synergies between these two businesses, the initiative appeared to be weak and conservative, possibly motivated by not interrupting the already highly profitable and recurring WTS CMS division (chemicals). What Veolia plans to do with these acquired businesses is yet to be seen. Driving these synergies is not complex; however, it requires a solid execution plan that pre-empts internal competition and sees it all the way through.

A company that aspires to be in the industrial BOO segment will need to have the capability to design, build, operate, maintain, and own water and wastewater treatment plants and related utilities. Contracting, financing and asset decapitalization skills will be needed throughout the process, as will permitting, employee training and safety programs. Structuring those capabilities into a coherent offering to customers is the pathway to success.

Typical profit margins for industrial outsourcing service models





WILL EUROPE ACCELERATE PHOSPHORUS RECOVERY FROM WASTEWATER?

By Lamia Moubakir, Consultant, and Dorothée Chabredier, Principal



Europe imports 92% of its phosphorus, mainly from Morocco (26%) and Russia (16%) from mining phosphate rocks, a non-renewable resource whose quality is decreasing while production costs are expected to increase. Because phosphorus is an essential resource for agriculture and its mining is almost not available in Europe (only a very small quantity is available in Finland), it was added in 2014 to the European list of critical raw materials.

The need for this has been reinforced by the current geopolitical tensions with Russia and possibly China, the latter producing close to 50% of the global 240 Mt of phosphate rock, that could destabilize the market. Will the water industry be able to seize this opportunity? What will be required? We will explore it in this article.

Major financial drivers encouraging phosphorus recovery

The price of phosphate rock, which is driving ROI and project investment for wastewater recovery, is expected to increase in the near future, pushed near-term by geopolitical tensions and inflation impacting mining production costs, and mid-term by phosphorus production peak and carbon tax.

With phosphate rock prices fluctuating in the past 20 years and expected to increase, recycled phosphorus prices could soon become equal and be economically



interesting. For example, in 2008, prices skyrocketed reaching ~\$350 for a ton of phosphate rock due to a high and growing demand associated with limited production capacities, driving many projects in wastewater recovery in Europe.

After that, mining countries invested in production factories to face the demand, thus making prices decrease and challenging wastewater recovery projects. Around \$80 per ton in 2020, its price doubled in the last year and was about \$170 per ton in January 2021. In the longer term, it is expected to increase again. Indeed, phosphate rock resources are limited, and production costs are likely to get higher, with mining being in deeper, more contaminated layers (e.g., by trace metals) and energy price increasing.

Mining production will also be limited soon as a phosphorus production peak is expected around 2030-2035 based on several scientific studies, while

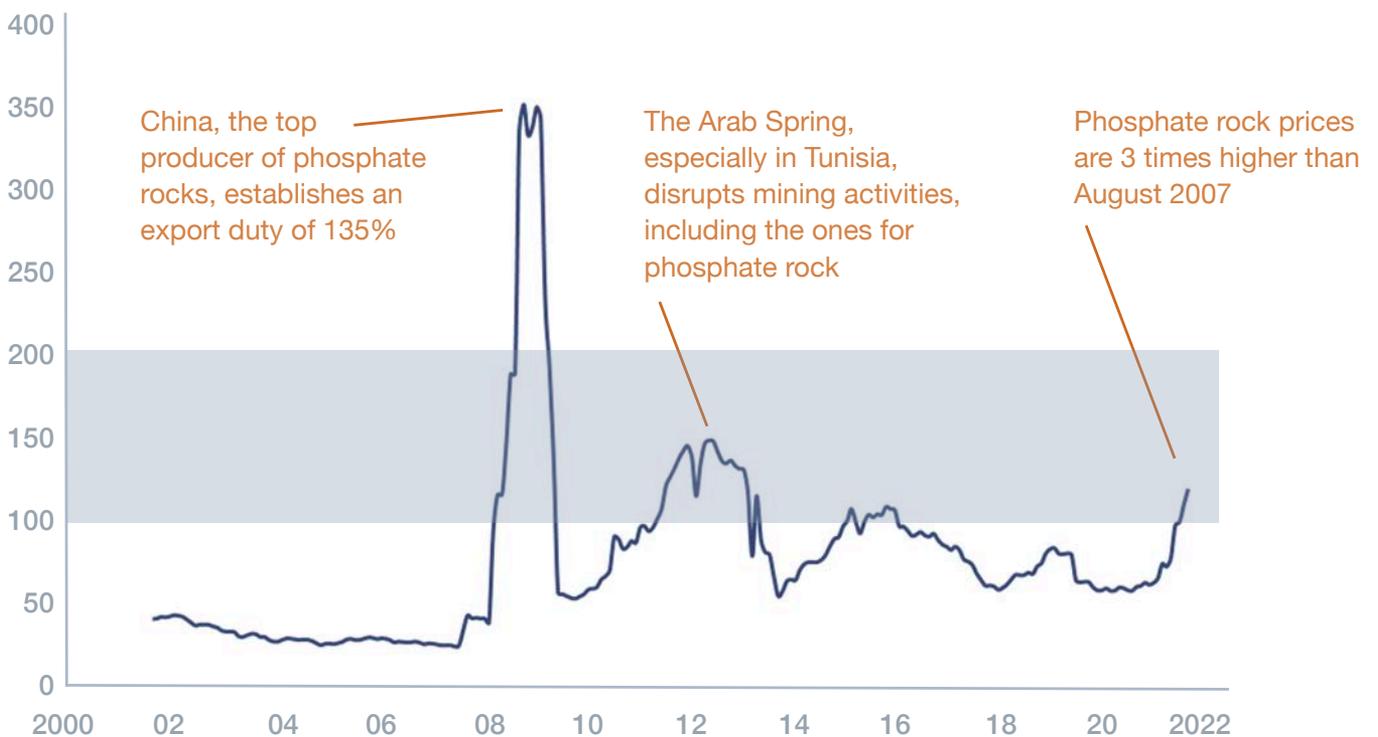
population is increasing, driving agricultural needs.

Moreover, the introduction of the carbon border adjustment mechanism (CBAM) will, starting in 2026, impose a carbon tax on imported products in Europe, including fertilizers.

In addition, recovering phosphorus (in the form of struvite) from wastewater can significantly decrease maintenance costs of a wastewater treatment plant. Maintenance costs usually account for up to 10-20% of total operation costs, which can be impacted by the phosphorus concentration in wastewater. When phosphorus is in high concentrations in the wastewater, it can get clogged (in the form of struvite) in the pipes and equipment of the plant, thus requiring more maintenance.

Price Evolution (price in \$/ton function of year)

█ Likely price range at which recycling phosphorus becomes economically attractive



Regulations already in place in some EU countries need to be extended

Some European countries are anticipating potential European-wide regulations around phosphorus recovery from wastewater treatment plants and are already putting in place national-level regulations. Such is the case in Germany, as early as 2026, for wastewater plants serving populations of 100,000 or more, and by 2032 for populations of 50,000 to 100,000. Switzerland has also introduced a similar regulation for phosphorus recovery from sludge, which will become effective in 2026.

At the EU level, regulatory evolutions are expected in the near future (starting in 2022) to encourage

phosphorus recovery, overcoming challenges for the commercial use of recycled phosphorus. Today, since recycled phosphorus is considered as waste in most European countries, facing the strict standards and legal requirements of the new regulations on fertilizers (EU Integrated Nutrient Management Action Plan, New EU Fertilizing Products Regulation) will facilitate the use of recycled phosphorus as a fertilizer. These regulations will encourage phosphorus recycling, facilitate the selling process of recycled phosphorus as a fertilizer, and authorize its integration as raw material in fertilizers.

Accelerating implementation

To fight against price volatility of phosphate rock and anticipate any upcoming risk regarding this resource, future users such as fertilizer producers supported by subsidies or agreements from the industry, could benefit from investing jointly with the water industry into phosphorus recovery projects.

In order to succeed while implementing those projects, choosing the right application is key, starting with fertilizers, supported by the upcoming regulations, then later focusing on more restrictive applications such as additives for cleaning products or detergents.

Recycled phosphorus from ashes (by incinerating sludge) or from wastewater has a lower phosphorus concentration (between 3% and 10%) than phosphate rocks (~14%). This can be limiting for specific applications that require higher phosphorus

concentrations and other types of constraints (e.g., additives for beverages).

Wastewater treatment plants will also need to be adapted, either by having a digester for biological treatment to recover phosphorus in the form of struvite, or by having a mono incinerator to recover it from sludge ashes. For example, in France, only about 25% of wastewater is treated in a digester for biological treatment.

Phosphorus platforms are also a great tool to share best practices, experience, networking and business cases, facilitating discussion among stakeholders and players in this market. A European platform does exist (European Sustainable Phosphorus Platform-ESPP) as do national ones, e.g., in the Netherlands or Sweden.

Conclusion

Despite the challenges, recent evolutions have shown that Europe would gain from investing in phosphorus recovery projects to strengthen its independence and secure its fertilizers costs, and ultimately its food security. Further countries' initiatives or regulations could drive and accelerate the recovery of phosphorus from wastewater and sludge. This will help transform recycled phosphorus into a commercial product, securing a source in Europe, at least partially, and closing the loop towards a more circular economy.





AMANE ADVISORS

provides strategic support on waste management and resource recovery to the Royal Commission of AlUla in Saudi Arabia

By Christophe Guillet, Managing Partner and Aurore Mariot, Consultant



Launched five years ago, Saudi Arabia Vision 2030 is a unique transformative economic and social reform blueprint that is opening the Kingdom up to the world. It is a strategic framework to reduce Saudi Arabia's dependence on oil, diversify its economy, and develop public service sectors including health, education, infrastructure, and recreation.

Among its main objectives is to develop tourism in Saudi Arabia as an alternative to the oil economy and to make the Kingdom one of the Top 5 global tourist destinations in the world.

As the first UNESCO World Heritage site in Saudi Arabia, AlUla is part of this ambition and Vision 2030. His Royal Highness Mohammed bin Salman bin Abdulaziz Al-Saud, the Crown Prince, Vice President of the Council of Ministers, Minister of Defense, and Chairman of the Board of the Royal Commission for AlUla County, has said: "We will turn AlUla County

into a living museum, creating memories that visitors will share with the world. Heritage is the main asset of AlUla. We have to use this asset to offer visitors a unique journey through time where they can enjoy a living museum."

Why is AlUla unique? AlUla is unique for the cultural heritage of old civilizations like the Nabatean Kingdom 2000 years BCE. AlUla also has a unique natural landscape of biodiversity with the Sharaan Nature Reserve and one of the largest palm tree plantations in the Kingdom.



As the first UNESCO World Heritage site in Saudi Arabia, AIUla is part of the Kingdom's Vision 2030.”

The Royal Commission of AIUla (RCU) was created to promote this unicity in order to attract two million visitors by 2035 and to leverage the proximity of targeted markets like Europe located within three hours of AIUla. The RCU has also the ambition to develop and deliver a sustainable transformation of the County of AIUla, building on a circular economy model and targeting a net-zero carbon strategy. New infrastructure and utility services will have to be implemented in alignment with the RCU's vision and standards of excellence.

For its resources recovery and waste management services, the Royal Commission is targeting an ambitious 70% recovery goal by 2035 based on recycling and composting of the county's different waste streams.

After conducting an initial gap analysis of the waste management services delivered for AFAIUla (Agence Française AIUla) during the summer of 2021, Amane Advisors was chosen by the RCU to provide support in defining the resources recovery strategy and in the implementation of the waste management services and facilities after the transmission of the solid waste competencies from the municipality to the RCU.

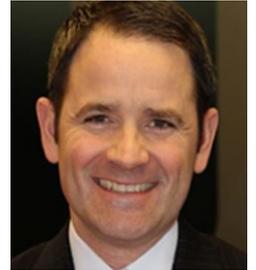
Amane's role consists of working alongside the RCU within a framework agreement to define the waste management and recovery strategy in the region. This involves several different phases of development: definition of the business case and strategy of the sector, support to the RCU in procuring the waste management services, and setting forth the best regulations and operating models. Amane will also propose alignments and measures needed to achieve the 70% recovery objective.

This project represents a significant milestone for Amane Advisors. In the future, AIUla will be one of the most visited tourist destinations in the world. Amane has demonstrated, through a first collaboration, our capability to identify the existing gaps and bring our expertise in the waste management sector to help our client achieve their objectives. The challenge will be to reach the 70% recovery target by 2035 — an ambitious goal when one considers that most European countries aim to reach this objective in 30 years. We are proud to contribute to this major project in the Kingdom and would like to thank the RCU for the trust and our efficient ongoing collaboration.



GUEST PERSPECTIVES

INSIGHTS INTO TRENDS, OPPORTUNITIES AND WHAT MAKES A COMPANY GREAT



*By Brendan Tierney, Managing Director, Global Head of Water Investment Banking,
Raymond James & Associates*

Tell us a bit about Raymond James and your practice in the water sector.

Raymond James is a NYSE-listed financial services firm with a \$22 billion market capitalization that has been built on a culture of doing what's best for its clients. While our investment banking division has over 450 bankers globally, my global water team has eight bankers in New York, Frankfurt and London and is the only team on Wall Street dedicated solely to

the industry. We focus on “all things” water including potable, ground, waste, storm and leisure (aquatics, pool & spa) water companies. My team has been fortunate to close over 35 transactions (sell-side, buy-side and capital raise advisory assignments) since 2016 representing over \$5 billion of value.

What do you see as the most important secular trend facing the water industry today?

We often discuss what we perceive to be the three core secular trends in the industry: aging infrastructure, water quality and water scarcity. While each is prevalent, I believe that aging infrastructure is the most important to address. We have all read the staggering statistics — among which, I find these the most disheartening: a water main breaks every two minutes and an estimated 6 billion gallons of treated water is lost each day in the U.S. — enough to fill over 9,000 swimming pools. What I have come to realize is that by investing in infrastructure, we can address quality

and scarcity as well — in some respect, a 3 for 1! With a more efficient infrastructure, we achieve numerous things: a reduction in municipal operating costs, a decrease in non-revenue (lost) water, lower costs and higher quality water to consumers, among others. A true “win-win.” Unfortunately, the ability to address the issue often gets muddied by politics and funding allocations. Bipartisanship is essential to supporting the ability of states and municipalities to secure the necessary funding ... and the Build Better Act is a promising first step.



What are the key practitioner trends driving the water M&A market?

1. **Rise of the Advisors.** Both strategic and private equity firms appear to increasingly utilize investment banking buy-side advisors to “run hard” at assets as buyers seek intelligence and advice on valuation, value creation, strategic planning, add-on opportunities, exit opportunities, and more. From the seller’s perspective, hiring a buy-side advisor can signal an increased amount of interest in the asset and provide buyers with a “leg up” in the process.
2. **Focus on ESG.** Buyers are increasingly seeking assets that contribute to society’s ESG focus, both through the nature of an asset’s offerings and solutions as well as how an asset conducts its operations. ESG diligence has become increasingly apparent in both pre-LOI and confirmatory diligence stages. As such, audit and rating firms are increasingly being utilized to assess the “score” of a company from an ESG perspective. Assets with an ESG angle have allowed for a broader buyer universe as well as opened the opportunity for a valuation premium. Sustainability private equity funds are increasing in number as limited partners are desiring a “double bottom line” (i.e., financial and impact return).
3. **Strategic Preempts.** With increasing auction process fatigue and pressure to secure strategically important targets, strategics are becoming more aggressive and adopting creative process strategies. As more and more potential buyers attempt to preempt a process at various stages, strategics are trying to keep with that dynamic and allow for seller favorable terms, such as: speed to close (due to limited financing requirements), working capital assumptions, management incentives, cash maximization and minimal escrow. Such a strategy has shown successful in numerous processes that our Water team has observed, and the trend shows no signs of slowing down.
4. **Operating Executives.** Private equity utilizes industry executive advisors for insights and thoughts, especially when knowledge in a certain sector is limited. In all likelihood, an industry executive will be working with many of the most interested parties in a certain asset; in those cases, the industry veteran will contact the appropriate coverage banker directly to get the “download” rather than perform their analysis in a vacuum.
5. **COVID and Supply Chain Impact.** Businesses were most noticeably impacted by COVID related issues as well as supply chain related concerns. From a shortage of employees to hire to increased sick days, businesses continue to struggle to maintain a steady operating tempo in a COVID environment. Furthermore, the global supply chain disruption continues to impact businesses, forcing many to adapt to such an environment by increasingly pre-buying inventory. Such an action has impacted the working capital outlook of businesses; as such, buyers are increasingly willing to accept such Quality of Earnings (QoE) adjustments as they lean into assets of interest given the impacts to their own divisions or portfolio companies.



What do you believe currently offers the greatest opportunity for investment in the water market and why?

There are several areas receiving heightened attention within the water industry, including atmospheric water generation, decentralized water treatment, emerging contaminants (PFAS) and trenchless rehabilitation.

With that said, I think the concept of digitizing (“smart”) water is the most interesting and provides for some of the greatest opportunities for investment in the water industry.

What do you think differentiates a great company from a good company?

In my opinion, a good company focuses on being a good servant to its employees while a great company is also a good servant to the community and world. Said differently, a good company provides a safe and healthy environment for its employees to grow personally and contribute to its success. A good company provides equality to all employees and creates a culture of unity, diversity and excellence. A great company delivers

what a good company does, plus there is a strong focus on being staunch stewards of the community and world. A great company understands that their actions and footprint not only affect their employees but those around them (think social responsibility and sustainability), which is why I think the ESG movement is garnering so much attention by investors today. Doing well by doing good!

How did you come to focus on the water market?

After 10 years of focusing on mergers and acquisitions (M&A) in NYC, my wife and I decided to relocate to Philadelphia to be closer to family. There, I joined a very small investment bank that had an extremely strong equity research presence in water and water utilities (including industry thought leaders such as Debra Coy, Heike Doerr, Jim Lucas and Ryan Connors). Under

their guidance and tutelage, I was able to garner a strong fundamental understanding of the industry and develop an affinity for the precious and fragile nature of the resource. Over the last 12 years or so, I have been humbled to have met, befriended, and advised many of the great stewards of water!

What do you like to do in your spare time?

As a proud father of three active sons, I enjoy attending, coaching and cheering on their various extracurricular activities. Nothing gives me more pleasure than to

watch my children learn and grow from success and failure on or off the court. When not on a competitive field, I enjoy skiing, golfing, snorkeling and traveling.

Past performance is not indicative of future results.

Raymond James & Associates, Inc., member New York Stock Exchange/SIPC



Employee
Spotlight:

NATALIE PEÑA



Position: Project Manager
Office: Singapore
Joined Amane
Advisors: June 2014
Nationality: American
Languages Spoken: English, Filipino (Tagalog)

Describe a typical day at Amane Advisors:

Mornings typically start off with a check-in with the Singapore team, where we catch up on how each other is doing, give an update about what we're working on, and if we are on a project together, prioritize tasks for the day. Then it's usually some focused time to get my head down in some work before and after lunch.

At 3 pm, because of the time difference with a large portion of the rest of the Amane team in Europe, it's mostly getting in and out of back-to-back meetings, which can be either expert interviews, check-ins/check-outs with the project teams, problem solving sessions or client calls.

What do you like best about your job (or find most rewarding) and why?

I'd have to say that I really enjoy coaching consultants and watching them grow in their roles. Since I joined Amane fresh out of business school as a consultant back in 2014, I understand what it's like to not know anything about water, and that can be pretty daunting. Whenever I can share my experiences with others, and coach newer consultants on new topics or skills, I really love those opportunities. Seeing consultants apply new skills or develop confidence on expert interviews or client presentations gives me joy.

I also love the discovery of new things that we are constantly exposed to day-to-day at Amane — be it in understanding new and untapped markets for a client, uncovering fresh insights during expert interviews, or quantifying findings through Voice of Customer surveys.

What has been the most challenging aspect of your work and why?

Right now, I'm facing quite a steep learning curve moving from being a Consultant for many years, to a Project Manager role, which I've been at since last year. Firstly, a fundamental shift has to take place in terms of mindset, such as from taking orders and executing tasks, to giving orders and driving the project. Then there's also the whole new aspect of juggling: managing various relationships with the client, upward with Principals and Partners, and downward with consultants, while also driving content and ensuring we deliver high-quality deliverables.



What has been the biggest surprise about working at Amane Advisors?

Actually, when I first joined Amane in its earlier years, I was expecting that I was filling a pure Market Research role, but I had come to realize that consulting simply utilizes market research as a tool to arrive at answers for client questions. I'd say that was a good surprise because I've picked up a lot of other skills along the way!

What three words would your colleagues use to describe you?

I'm going to go with 3 Ps: positive, productive and polite!

Name something about you that most people would find surprising.

This is tough! I guess that I can be very competitive at board games.

What are your favorite activities outside work?

I find anything that involves creating things incredibly relaxing. I love baking and having dessert in general because I have a sweet tooth and find it so rewarding to sink my teeth into a freshly-baked, warm cookie! It's also something I get to share with people. When I have more time, I also enjoy board games, photography, scrapbooking and playing the piano and guitar. Of course, I also love spending time with my family. Traveling too! Can't wait to get back out there after the pandemic.

What is your favorite book?

Between taking care of my household (which includes two very energetic toddlers — a three-year-old and a one-year-old) and work commitments, I have to admit that I haven't read a book that wasn't parenting-related in some years! One of the ones I enjoyed best was "Cribsheet: A Data-Driven Guide to Better, More Relaxed Parenting" by Emily Oster, which gives real, fact-based data to help decision-making on what parenting style to adopt. I wouldn't say it influenced my parenting style in the end as much as I thought it would, but it did help me approach new parenthood in a familiar way I knew how — like a trained consultant looking at the facts and making decisions based on them!

What is the best advice you have ever received, and who gave it to you?

It was given by a family friend before my wedding in the context of marriage, but it was something along the lines of "Remember you're on the same team." Even though it was meant for husbands and wives, I think this applies to many situations when facing disagreements. I tend to believe that everyone has good intentions and is trying to achieve a common good, and that disagreements are just a result of different perspectives or approaches to achieving that. I find that this helps me appreciate that people are usually coming from a good place, and that means we should just focus on being solution-oriented rather than our differences or assigning blame.



NEW HIRES

Please join us in welcoming our newest team members!



William Betts

- Joined Oxford, UK office in March 2022 as Project Manager.
- Worked in the UK water industry for six years in both the water and wastewater sectors. Former Water Strategy Manager for Thames Water, the UK's largest water & wastewater utility.
- Holds Master's Degree in Medieval and Renaissance Studies and undergraduate degree in Modern Foreign Languages from Durham University. Member of the Institute of Asset Management.



Luis Gomez Ferreira

- Joined Bahrain office as Senior Consultant in April 2022.
- Previously was Consultant at Deloitte Portugal covering national and international projects, with expertise in M&A/carve-out programs, process design and optimization, business intelligence tools, cost & pricing models, and PMO.
- Holds undergraduate degree in Business Administration from Catolica-Lisbon SBE and a double master's degree: Masters in Management from ESCP in Paris and International Master in Management with Major in Strategy and Consulting from Catolica-Lisbon SBE.



Alisha Krishnan

- Joined Oxford, UK office in January 2022 as Consultant focused on delivering market intelligence services.
- During her time at university, went on a year-long industrial placement where she worked at a regional development authority under the Prime Minister's office in Johor, Malaysia and worked with the UNDP in Mauritius.
- Holds Master of Science degree in Sustainability and Management and a Bachelor of Science degree in International Development and Economics, both from the University of Bath.





Aurore Mariot

- Joined Amane as full-time Consultant in the Bahrain office in January 2022 after completing a four-month internship.
- Held internships at the National Bank of Bahrain focused on strategy and business development, as well as LBV Asset Management. Also worked with start-up to create on-device voice assistant.
- Holds Bachelor of Arts degree in Management and French Literature from King's College London; spent year abroad studying for a Global Bachelor in Business Administration at ESSEC Business School.



Kitty Rooney

- Joined Amane in Oxford, UK office as Consultant in February 2022.
- Recently completed internship as Sustainability Consultant at property and construction company in Manchester, UK. Master's thesis investigated whether constructed wetlands could mitigate microbial pollution of England's rivers.
- Holds Master of Science degree in Water Science, Policy & Management from the University of Oxford, and Bachelor of Arts degree in Geography from the University of Cambridge.

Amane Advisors: In the news



Amane is proud to announce that Dorothée Chabredier, principal and our firm's ESG lead, will be part of the Water Technology Idol jury at the 2022 Global Water Summit on "Water-Positive Zero Carbon." Five of the hottest and most innovative start-ups in desalination and water reuse will pitch in Madrid on May 17 in hopes of being crowned the Water Technology Idol for 2022.

Presented with the goal of showcasing new desalination technologies, the Water Technology Idol has been part of the Global Water Summit for the past 13 years. The selection process entails 8-10 minute presentations by each of the finalists,

followed by interviews by a panel of four judges. Following the conclusion of the presentations, the judges plus the panel of six jurists will choose the winner. The announcement will be made during the Global Awards dinner.

Dorothée's participation as part of the jury reflects her deep expertise as well as Amane's larger commitment to support the growth and development of innovative water start-ups across the circular economy and the areas of resource protection and regeneration.



ABOUT THE AUTHORS

- Dorothee Chabredier is a Principal at Amane Advisors. Based in Paris, France, she leads Amane's sustainability/ ESG offering globally. She can be reached at dchabredier@amaneadvisors.com.
- Geoff Gage is a Partner at Amane Advisors. He is based in Oxford, United Kingdom, and serves clients across the water sector with a focus on strategic and operational topics. He can be reached at ggage@amaneadvisors.com.
- Christophe Guillet is a Partner for the MENA region at Amane Advisors. Based in Bahrain, his activity is focused on providing greater support to public and private partners to help accelerate the uptake of PPP in the water sector. He can be reached at cguillet@amaneadvisors.com.
- Bill Malarkey is Partner, North America, and also serves as editorial director of *amane currents*. He has over two decades of experience in the international water and infrastructure markets, particularly in the area of strategy development and mergers & acquisitions. He can be reached at bmalarkey@amaneadvisors.com.
- Aurore Mariot has been a Consultant in the Bahrain office since January 2022. She joined Amane Advisors after completing an internship at the firm. She can be reached at amariot@amaneadvisors.com.
- Kerry Murphy is an independent water industry consultant in the Greater Philadelphia area. He can be reached on LinkedIn at [linkedin.com/in/kerryemurphy](https://www.linkedin.com/in/kerryemurphy).
- Lamia Moubakir is a Consultant at Amane Advisors based in the Paris office. She has worked on various projects including M&A advisory, strategy, market intelligence, with a focus on the Residential & Commercial water market. She can be reached at lmoubakir@amaneadvisors.com.
- Natalie Pena is a Project Manager in the Singapore office. Her responsibilities include managing projects in Southeast Asia, and she is also focused on Market Research projects globally. She can be reached at npena@amaneadvisors.com.
- Brendan Tierney is Managing Director, Global Head of Water Investment Banking, at Raymond James & Associates, Inc., member New York Stock Exchange/SIPC. He can be reached at Brendan.Tierney@RaymondJames.com.
- Avinash Vijay is a Project Manager based in Paris, France. He has worked with numerous multi-national companies including utilities as well as investors and is focused on M&A strategy in the water infrastructure and treatment sector. He can be reached at avijay@amaneadvisors.com.



CONTACT US

FRANCE

44 rue Lucien Sampaix
75010 Paris
Tel: +33 (0) 1 75 43 17 00

UNITED KINGDOM

The Stables (White & Black)
Home Park, Grove Road, Bladon
Oxfordshire
OX20 1FX
Tel: +44 (0) 1865 655 715

USA

85 Old Eagle School Road
Suite 204
Strafford, PA 19087
Tel: +1 610 906 2916

BAHRAIN

Office 116, Platinum Tower,
Building 190, Road 2803,
Block 428, Seef District
Tel: +97 377 110 110

CHINA

11/F Tomson Commercial Building
No.710 Dongfang Road
Pudong District, Shanghai, 200122
Tel: +86 21 58818236

SINGAPORE

541 Orchard Road
Liat Towers, #20-04
Singapore 238881
Tel: +65 6515 0725

contactus@amaneadvisors.com
amaneadvisors.com



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