2020

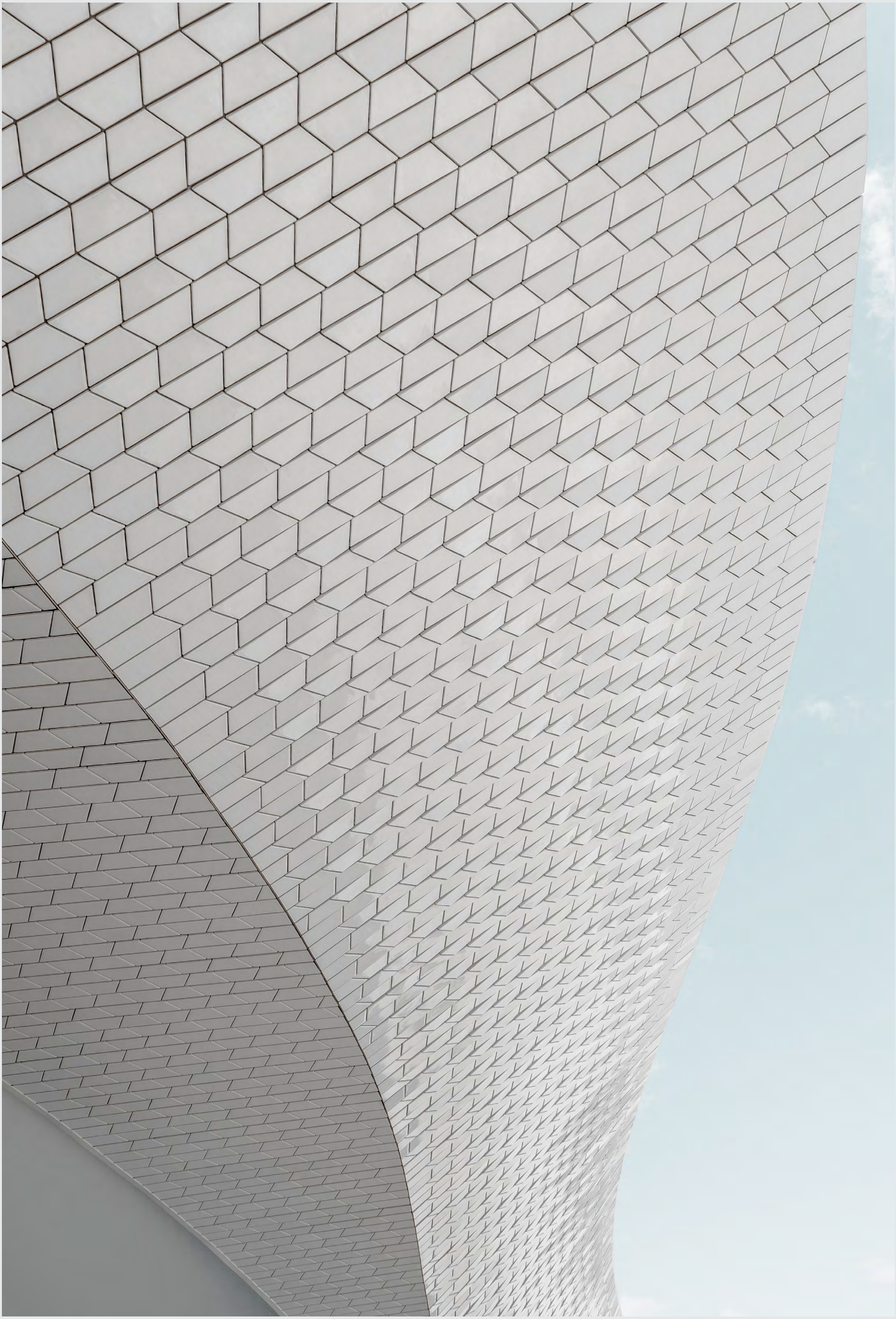
By VALUER

SDGFORECAST

AI-Driven Sustainability Insights

Aligning Business Operations With the SDGs Through Collaboration With Startups

INSIDE: Three Startups That Can Help a Corporation Align With Goal 6



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What is the SDG forecast by Valuer?

About Valuer.ai

Valuer is an intelligent matchmaking platform that helps corporations, investors, and accelerators discover compatible startups that will boost their innovation. The company supports the idea that corporations can modernize their work with the skills and technology of startups while supporting startup growth with industry experience and resources.

To enable the formation of such symbiotic partnerships, Valuer uses its crowdsourcing network to discover startups relevant to the large organization, and a machine learning platform to evaluate them. Functioning as an innovation radar, the platform continually learns and "recalibrates" itself throughout the discovery process to meet the customer's unique needs.

Founded in 2017, Valuer has a team of more than 90 people from all over the world and has so far worked with BMW, Siemens Gamesa, Novozymes, Grundfos, and Spirent, among other prominent organizations.

The following issue focuses on Goal 6: **Clean water and sanitation**

Published monthly, each issue of this report focuses on a different Sustainable Development Goal (SDG). By taking a deep-dive into the progress of the goal in question, it covers various aspects of how the business sector can play an essential role in achieving its aspirations.

Hoping to serve as motivation, the publication starts with the possible benefits and opportunities for purpose-driven companies and moves onto market analysis and the currently trending technologies. Moreover, it provides multiple examples of large organizations and young startups that are doing excellent work in ensuring a prosperous global community.

In line with Valuer's rationale, the report stresses the benefits that surface once various market actors, specifically corporations and startups, decide to work together towards achieving environmental and social sustainability.

How the Valuer Platform Uses AI to Find SDG-Related Startups

We ran the AI platform to identify the **1000 startups most relevant to each of the five focus areas related to SDG 6.**

Three of the relevant startups we found are included in this report as examples (page 19).

Efficient use of water

Water management in agriculture

Wastewater treatment

Sanitation management

Clean water for developing countries

How does the platform identify startups relevant to SDG 6?

The process starts with Valuer **clustering its database of startups potentially relevant to SDG 6.** Most notably, the startup descriptions are processed by NLP, which finds patterns impossible to recognize with tags and regular search mechanisms.

The platform then **references the clusters to the five focus areas deducted from SDG 6.** By choosing the ones nearest to a projected point, it finds the 1000 startups most relevant to each area.

Grouping startups that relate to different areas of SDG 6

The illustration shows the clusters of startups (represented with dots) colored depending on their projection area. Their proximity to other startups depends on how much their solutions have in common.

The image lets us make simplified conclusions, but since the platform processes in 1024 dimensions, the insights we can draw from a 2D illustration are limited. This is also why some dots seem very distant from their projection areas.

Valuer Startup Cluster:

- Sanitation management
- Efficient use of water
- Wastewater treatment
- Water management in agriculture
- Clean water for developing countries

VALUER
Source: Valuer.ai Platform

Interesting insights and startup trends

The platform can draw several insights from the clustering:

- "Water management in agriculture" and "Efficient use of water" are similar in their offerings and different from the other areas. **This indicates more focus on optimization within already existing technologies and fewer new ones.**
- "Clean Water for Developing Countries" are fairly focused in their offerings, but similarities can be found with "Sanitation Management" and "Wastewater Treatment." **This suggests a sector that focuses on similar technologies but includes solutions from other areas.**
- "Sanitation Management" and "Wastewater Treatment" are the most scattered clusters, which suggests a large diversity of solutions. **This signifies a high degree of combining technologies from other sectors, which could indicate more radical innovation.**

Finding the most relevant SDG 6 focus areas

The platform uses three parameters to assess the clusters' relevance, importance, and innovativeness:

- **Success factor:** The cluster score is based on its startups' success potential. The system uses multiple parameters for this, including funding, age, and human capital.
- **Match factor:** The platform uses our customer's Objectives and Challenges to calculate how well an area matches their needs (in this case, the information on SDG 6).
- **Innovation factor:** Our innovation potential model is secret. But, for example, it gives positive scores to previously unknown combinations. For instance, it discovered the combinations "Blockchain" & "Water" for a customer once, which guided their search.

Focus	Success	Match	Innovation	Total
Sanitation	34	86	94	**214**
Efficient use	82	68	71	**221**
Wastewater treatment	79	87	67	**233**
Water Management	64	79	60	**203**
Clean water for developing countries	42	75	39	**156**

Table: Five areas of focus ranked by the three parameters.

VALUER Source: Valuer.ai Platform

Ranking the five SDG 6 focus areas

At this point, the platform ranks the results to find the most suitable area of focus for our customers. In this case, it used the three parameters (Success, Match, Innovation) to rank the SDG 6 clusters of startups:

"Efficient use of Water" is the highest-ranked cluster on our AI platform, while "Clean water for developing countries" ranks the lowest, mainly because of the Success element, which could suggest investments and potential for profitability are low in this area.

Next step: Run the platform to find the best-matching startups for your company

Given this data, **companies can choose the area most relevant to their needs and run the platform to find the related best-matching startups.** The startups featured at the end of this insight report (page 19) give a sneak peek of the final format in which our customers receive the companies that were selected for them.

Innovation: Key Driver in Building a Sustainable Future

We are moving too slowly and face great danger of coming up short of the Sustainable Development Goals. To keep pace with the growing societal needs, we need to embrace innovation as the answer to reducing the time and cost necessary to achieve results.

Technological breakthroughs and creativity are critical to advancing the SDGs and facing the ever-increasing list of sustainability concerns. Disruptive innovation is not a silver bullet but holds the highest potential in addressing complex systemic global issues. Fortunately, transformative change is something humans have done many times before.

The private sector, in this context, plays a crucial role in advancing the global development agenda. However, no single company can address such a challenge alone. This is why collaboration between industry players is essential to achieving the solutions we need—and the philosophy of the SDGs recognizes this.

Reaching Corporate Sustainability Through Collaboration With Startups

By embracing collaboration with startups and innovators, corporations can adopt novel solutions and achieve cleaner and more sustainable operations and products. Such partnerships are one of the promising ways to foster the future of industries, rapidly scale-up efforts, and support the UN Global Goals.

Moreover, the adoption of novel sustainability solutions goes beyond society's call for greater transparency and accountability. Blending purpose with profit promises a competitive advantage that meets the expectations of modern customers and employees. Partnering with innovative startups to make operations sustainable can, among others, generate new revenue, reduce costs in the long-run, open the way to untapped markets, increase supply chain resilience, and improve brand image.

We're already witnessing a wave of progressive, profit-oriented companies and entrepreneurs who are using innovative models to enter SDG-related markets and ensure long-term business growth. For instance, BMW is staying *"ahead of the curve"* by expanding operations and positioning the brand as a provider of shared-mobility services.

The Startups Featured in This Magazine

16,427,624 USD

AVERAGE FUNDING OF THE SDG 6-RELATED STARTUPS ON THE VALUER PLATFORM

VALUER Source: Valuer.ai Platform

This publication aims to demonstrate the way that Valuer can help corporations find the right solutions that align with their corporate sustainability goals. For this purpose, we've included a selection of three startups that fit the content of this paper and the objective of SDG 6: Ensure access to water and sanitation for all.

Placed at the very end of the paper, the format of the startup features resembles the one our customers receive once their startup search is finalized. But, there's one very significant difference—the selection here is a general example that doesn't take into account a corporation's unique needs.

Read through the report and find out more about a novel UV LED system for wastewater purification, a solution that removes PFAS and other micropollutants from water, and a technology for turning liquid waste and sewage sludge into biogas and fertilizers.

About the UN Sustainable Development Goals

THE GOALS ARE DESIGNED TO BE

"The blueprint to achieve a better and more sustainable future for all."

In 2015, the UN general assembly adopted the 2030 Agenda for Sustainable Development, which includes 17 Sustainable Development Goals. Intended to be achieved by 2030, the goals are designed to be "the blueprint to achieve a better and more sustainable future for all."

Signed by 193 heads of state, each goal has a list of targets whose progress is measured with specific indicators. With data available in an easy-to-understand form, the 17 SDGs are broad-based and interdependent—meaning that the action in one goal's area will affect the outcomes in others.

The SDGs build on the Millennium Development Goals (MDGs) that were agreed by governments in 2001 and expired in 2015. Aside from being more all-encompassing than the MDGs, which were considered to be too narrow in focus, the consultation process for the SDGs was much more inclusive. The new goals tackle a wide range of areas, from poverty and gender inequality to climate change.

The Sustainable Development Goals

1. No Poverty

2. Zero Hunger

3. Good Health and Well-being

4. Quality Education

5. Gender Equality

6. Clean Water and Sanitation

7. Affordable and Clean Energy

8. Decent Work and Economic Growth

9. Industry, Innovation, and Infrastructure

10. Reducing Inequality

11. Sustainable Cities and Communities

12. Responsible Consumption and Production

13. Climate Action

14. Life Below Water

15. Life on Land

16. Peace, Justice, and Strong Institutions

17. Partnerships for the Goals

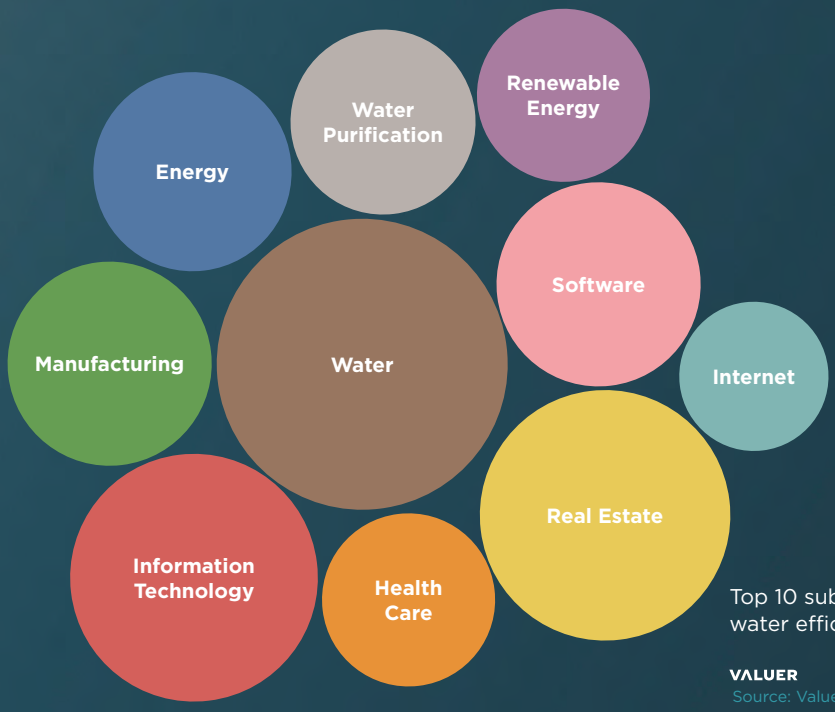
Development Goal in Focus

SDG 6:
Ensure access to water and sanitation for all

The purpose of the sixth sustainable development goal is to ensure equitable access to water and sanitation services globally. Targets included within these goals relate to the responsible and economical use of water, water recycling, building adequate infrastructure to support access to water for drinking and hygiene, as well as decreasing pollution and preserving water-related ecosystems.

Even though water is essential to human health and well-being, presently about 3 in 10 people in the world lack access to safe drinking water. Most of the world's freshwater resources are used for industry and agriculture, both of which massively depend on it for production.

Since water scarcity affects everyone from individuals to businesses, implementing sustainable water practices is becoming a priority for countries. The UN urges stakeholders to focus on developing technologies that can decontaminate or recycle water, as well as on reducing the amounts of harmful chemicals released in rivers and oceans. Smart water management will be necessary as well, including preventing water waste and growing crops appropriate to available water resources.



Top 10 subsectors of the water efficiency startups

VALUER
Source: Valuer.ai Platform

Aligning Business Strategies With SDG 6

"First movers who have already aligned their resource use and workforce management with the Global Goals will have a 5-15 year advantage on the sustainable playing field."

THE BUSINESS AND SUSTAINABLE DEVELOPMENT COMMISSION

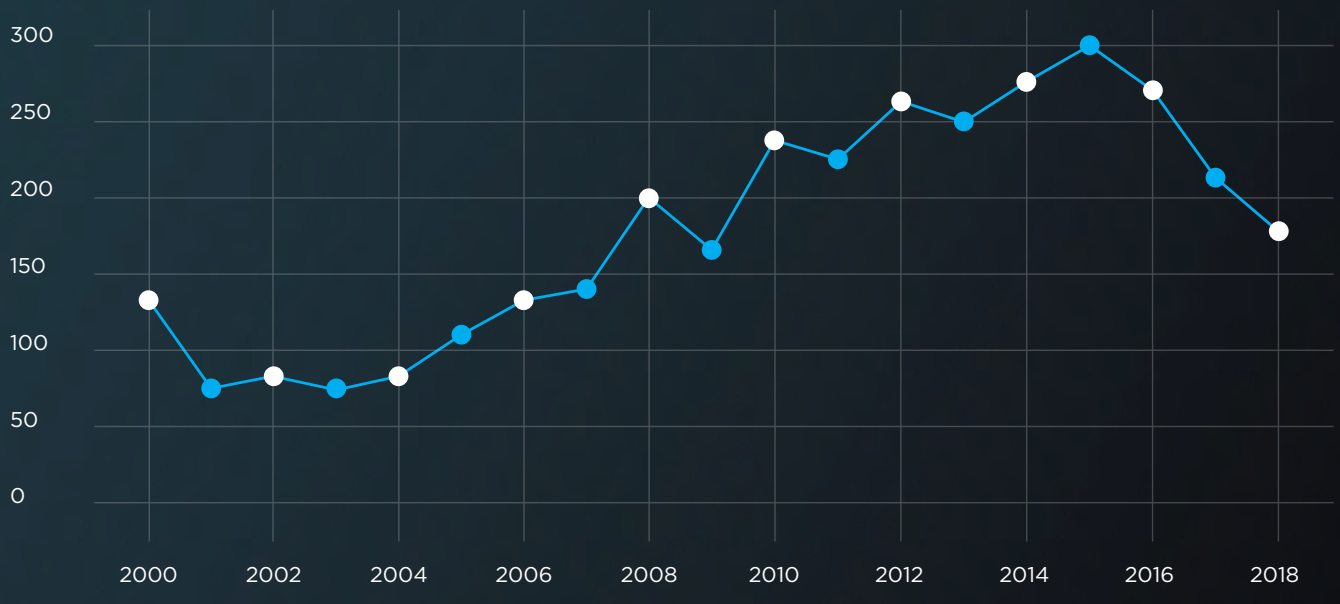
Saving Water Saves Money

For companies, the value of achieving water efficiency is much bigger than that of not taking action. Water flows from the fields where materials grow, through the complex supply chains and manufacturing facilities, all the way to corporate headquarters. There is no business without water, but between climate change and the increasing world population, its scarcity is now intensifying at an unprecedented rate.

The UN predicts that under current trends, the demand for water will exceed supply by 40% in 2030. As a result, a failure to address the targets regarding water efficiency could lead to significant disruption for global supply chains, with agriculture and manufacturing at particular risk.

Fortunately, innovative technologies are transforming resource management, and the business sector can significantly reduce its water use. From disruptive solutions for water recycling to efficient in-house purification systems, companies have the chance to embrace the SDG 6 agenda and recognize it as a driver of business strategies and innovation.

Understanding the threat that water stress poses to their operations, cost base, and license to operate, many leading companies have already developed water stewardship strategies. **Some of the benefits of those programs are obvious—they tend to reduce costs, lower risk profiles, bring competitive advantage, and open the doors to new market opportunities.**



Average funding and age of the wastewater treatment startups on the Valuer platform.

VALUER
Source: Valuer.ai Platform

Advice for Corporations

Deciding to incorporate the SDGs into a company's operations can seem intimidating. Fortunately, there are numerous tools and guidelines specifically designed to help organizations realize which goals are most applicable to them and how.

The following recommendations focus on *SDG 6: Clean water and sanitation.* They are most relevant to corporations that are considering a water stewardship strategy but can be easily modified to fit the other sustainability goals.

Step 1: Audit Your Water Use

An accurate evaluation of your water consumption is imperative to making a good sustainability plan. Whether you decide to work with an outside company or conduct an internal process, your water stewardship program begins with calculating your water footprint along the entire value chain and identifying the points of misuse and waste.

Utilize Data

Once you have the results of the audit, the data will help you create a water management plan with specific targets and compare your consumption to industry benchmarks. When you've started implementing your new program, your utility bills will help you analyze if the changes are driving any cost savings.

Define Priorities and Focus Your Efforts

The SDG Compass website offers business indicators mapped against the 17 SDGs and their targets, which can help your company understand where to concentrate its efforts. "The SDG Compass online inventory of indicators provides information on commonly used indicators related to water and sanitation, including from the CEO Water Mandate's Corporate Water Disclosure Guidelines, which address the complexity and social nature of water resources."

Outline Specific Goals and KPIs

Once you've assessed your current situation, you can set specific, measurable, and time-bound goals for your organization. Selecting several KPIs for each area of prioritization is highly advised as an essential step to monitoring your progress and for avoiding goals that are too broad and impossible to measure.

Avoid Short-Termism

The SDGs are intended to be achieved by 2030 and to serve as *"the blueprint to achieve a better and more sustainable future for all."* The fact that they can not be achieved overnight might seem discouraging but can serve as a simplification for organizations to make long-term sustainability programs that are aligned with best practices globally.

Communicate Your Ambition

Numerous stakeholders in the sustainability field advise that to stimulate accountability and motivation, companies should announce their targets publicly. But even though ambitious goals usually result in greater impact and drive internal innovation and creativity, it's important to consider the risk of criticism your company might face if it doesn't meet the targets in time. One way to address this potential issue is by embracing transparent communication regarding your efforts and the challenges you're facing.

Innovate and Collaborate

By combining their complementary skills with other companies and innovative startups in the value chain, corporations can make their operations more sustainable in a way that creates business growth. When used as a framework for innovation, the SDGs can help scale-up efforts and create new business models and products.

These and more potential benefits from water sustainability are explored on page 32.

Benefits for Corporations

Water is already recognized as a material risk, and since it's an essential resource to any business, stewardship programs are critical to long-term growth. Robust water strategies and action plans can help companies manage risks, build resilience, and create business value.

These are some of the benefits that forward-thinking organizations can expect from such programs.

Improved Brand Image

Today's customers are more likely to buy from companies that are known for practicing sustainability. Research by NYU Stern's Center for Sustainable Business conducted in 2019 on the U.S. consumers' purchasing of consumer packaged goods found that 50% of CPG growth from 2013 to 2018 came from sustainability-marketed products. Furthermore, a PwC study found that 78% of consumers are more likely to buy from businesses that are aligned to the SDGs.

Improved Employee Retention and Recruitment Rate

Sustainability performance is becoming an important factor in the "war for talent." Employees, especially the younger generations, prefer working with organizations that support corporate environmental programs. Research by The Manifest in 2019 showed that "nearly 75% of employees will not accept a raise from a company that creates environmental problems." Furthermore, a survey by Cone Communications showed that "70% of employees would be more loyal to a company that helps them make a positive environmental impact."

Reduced Legal and Other Business Risks

Regulations are becoming stricter as a response to climate change, pollution, and decreasing natural resources. Aligning operations with SDG 6 will help companies meet changing regulations in a timely manner and avoid penalties under their state's environment legislature.

Increased Financial Performance

Companies that invest in environmental initiatives, including water management, can expect to gain a competitive advantage. According to research by the Boston Consulting Group, "better water resource management was one of three key ESG metrics driving better financial performance for consumer goods companies" and "enhanced conservation of water use, alone, correlated to higher earnings of 3.1 percentage points, as measured by EBITDA, and gross margins that were 5.5 percentage points greater."

Increased Resilience to Water Scarcity

The global water crisis is already threatening businesses worldwide. Investing in water reduction technologies will help companies reduce exposure to water scarcity, which can disrupt and damage brands. Research conducted by CDP found that the financial hit taken by companies due to water challenges in 2018 alone was $38.5 billion.

Market Opportunities and Technology Trends

Opportunities in the Industrial Wastewater Treatment Market

22,983,607 USD
10 years

AVERAGE FUNDING AND AGE OF THE WASTEWATER TREATMENT STARTUPS ON THE VALUER PLATFORM

VALUER Source: Valuer.ai Platform

A report by the European Environment Agency emphasizes that the industrial releases to water and the discharges of pollutants from urban wastewater treatment are factors that put enormous pressure on water as a resource. These findings demonstrate that there is a market opening for more effective wastewater treatment technologies, especially for the industries.

On that matter, analysts from Markets and Markets project that **the global industrial wastewater treatment market will be growing from $11.3 billion in 2019 to $15 billion by 2024, at a CAGR of 5.8%** over the forecast period.

The report suggests that globalization and urbanization are increasing at a growing rate, thus creating more scenarios where industrial wastewater treatment is needed. Because of the increasing industrialization, countries like Germany, Brazil, Mexico, India, and China are identified to be the main consumers of wastewater treatment solutions by 2024.

Emerging Technology Trends:

- **Chemical wastewater treatment based on biocides and disinfectants:** The demand for biocides and disinfectants keeps growing due to increased environmental regulations.
- **Novel anaerobic digestion (AD) processes:** The decomposing of organic matter in wastewater into carbon dioxide and methane, targeted at municipal and industrial levels.
- **Electrochemical oxidation:** Transforming water pollutants, like organics and ammonia, into gasses like CO2, O2, H2.

Opportunities in the Smart Water Management Market

According to a study from 2018, circa 126 billion cubic meters of water is lost per year, or $39 billion when translated into currency. This frees up a place in the market for innovative solutions that prevent losses through more effective management of water resources.

One of the markets relevant to such innovations is the global smart water management market. Researchers from Markets and Markets have estimated it to reach $21.4 billion by 2024, growing from $11.7 billion in 2019 at a CAGR of 12.9%. The report emphasizes that the enterprise asset management segment is estimated to hold the highest market share, owing to the increasing adoption of real-time condition monitoring and predictive maintenance of assets.

One significant contribution to the market is the governments that are becoming more aware of the challenges and are introducing various initiatives that incentivize the modernization of the water infrastructure. This, among others, paves the way for more serious cooperation between governments and corporations, which can help companies create an image of being actively included in the building of more sustainable communities.

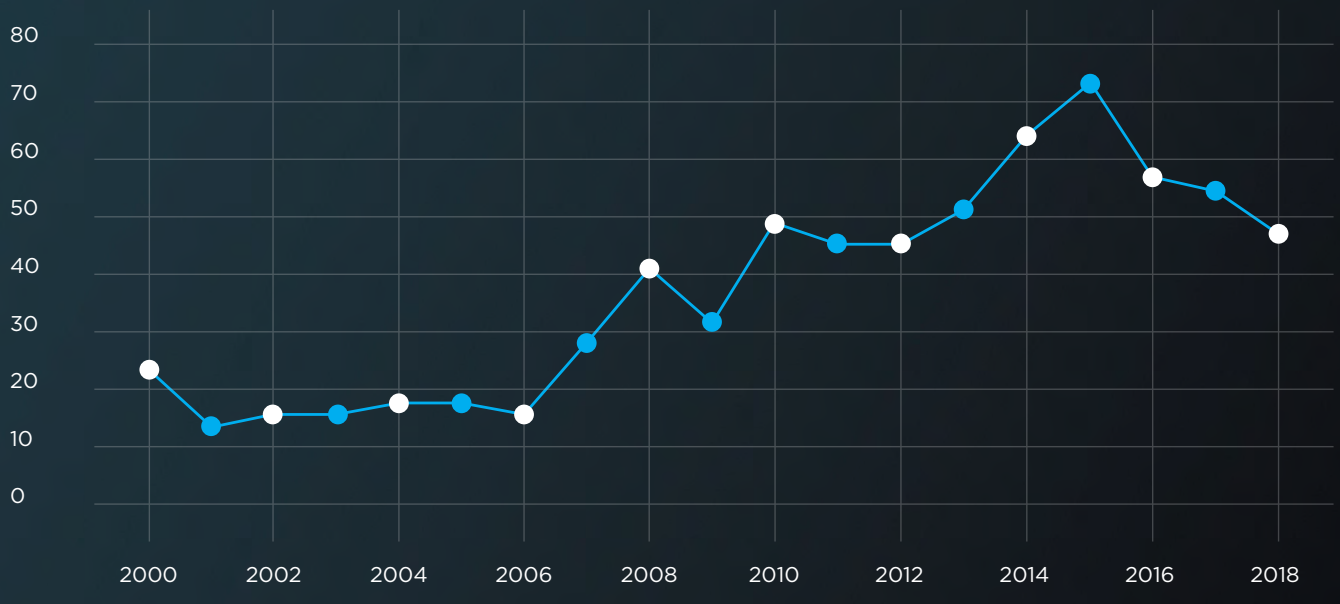
20,823,034 USD

AVERAGE FUNDING OF THE SMART AGRICULTURE STARTUPS ON THE VALUER PLATFORM

VALUER Source: Valuer.ai Platform

Emerging Technology Trends:

- **Data monitoring solutions:** Combination of hardware and software, collecting on-site water use data, and analyzing it to pinpoint inefficiencies.
- **Risk mitigation solutions:** Predictive maintenance of pipelines and water networks to decrease the risk of bursts and water loss by using technologies like AI and machine learning.



Trend line of the years when the smart agriculture startups were funded

VALUER
Source: Valuer.ai Platform

Opportunities in the Smart Agriculture Market

According to the World Bank, the agricultural sector accounts for 70% of all global freshwater withdrawals. Their analysis from 2017 states that, at these rates, **by 2050, the growing population will require a 50% increase in agricultural production and a 15% increase in water withdrawals.**

As a response, we see new innovative solutions on the market, including IoT, cloud services, software, and system solutions. We're also witnessing the rise of agritech (technology in agriculture), where according to McKinsey, startup investments grew 43% in 2018.

These solutions helped disrupt the existing market and even created new ones, like the smart agriculture market. **Markets and Markets projected the smart agriculture market to grow from $7.53 billion in 2018 to $13.5 billion by 2023, growing at a CAGR of 12.39%.**

Furthermore, **the research shares that the smart irrigation market is set to reach almost $1.8 billion by 2023, growing at a CAGR of 16.3% between 2017 and 2023.** Smart irrigation systems help decrease water use, as watering is done with a precise schedule based on several parameters such as plant water, soil moisture, and data about the local weather.

Emerging Technology Trends:

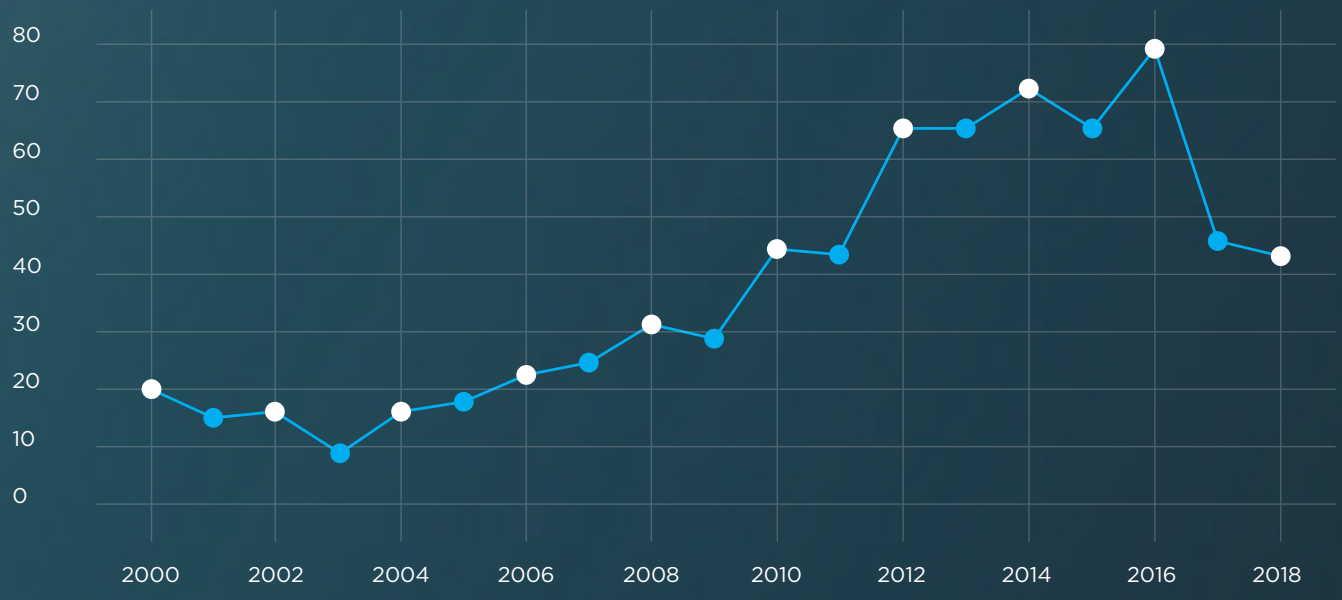
- **IoT and sensors:** Deploying sensor-based solutions for controlling soil irrigation and monitoring soil moisture, temperature, humidity, etc.
- **Precision agriculture:** Using satellite imagery to optimize returns, predict crop conditions based on geolocated weather data, and preserve resources like water.
- **Vertical farming:** Very convenient for urban settings, uses energy-efficient lighting and systems for efficient water collecting.

$

8,493,484 USD

AVERAGE FUNDING OF THE STARTUPS ON THE VALUER PLATFORM THAT WORK WITH EFFICIENT USE OF WATER

VALUER Source: Valuer.ai Platform



Trend line of the years when the water efficiency startups were funded

VALUER
Source: Valuer.ai Platform

Corporations That Do a Great Job at Tackling Goal 6

The following three examples are of multinational corporations that are successfully aligning their operations with the targets of Sustainable Development Goal 6.

Grundfos

Grundfos has recognized the business potential of SDG 6 and has based its growth strategy on clean and sustainable water use. Through its employee-driven project, Water2Life, the company has initiated fundraising efforts and helped build clean water infrastructure for more than 40,000 people worldwide.

In collaboration with NGOs, government agencies, and private companies, Grundfos runs the Lifelink project that aims to improve water access in the developing world. In addition to providing solar-powered pumps for the project, Grundfos developed the AQtap ATM, an automated water kiosk innovation that tracks water usage and allows locals to pay for water through water credits. The solution has already been installed in parts of Kenya, Uganda, Mozambique, and India, among other countries. In 2018, Grundfos and its project partners had provided access to clean water for more than 1.66 million people.

Furthermore, the Grundfos product line itself is built around water utility and addresses challenges within water quality and security. For example, the Demand Driven Distribution method minimizes water leaks that can cause water losses of up to 70%. The DDD method combines with a cloud-based solution and smart pumps to optimize pump work and water supply. A Cambodian water plant where this system was installed saved 15% in energy and water while improving water supply for its customers. In 2018 Grundfos reported that its smart water management solutions have led to a 34% reduction in water consumption as compared to 2008. To improve water use and quality, Grundfos also develops solutions for water treatment and disinfection.

21,044,992 USD

10 years

AVERAGE FUNDING AND AGE OF THE STARTUPS ON THE VALUER PLATFORM THAT WORK WITH SANITATION MANAGEMENT

VALUER Source: Valuer.ai Platform

Gap

Given that the fashion industry is a big contributor to water overconsumption and pollution, Gap Inc. places water stewardship at the top of its sustainability efforts. In 2018, the company set a goal to conserve 10 billion liters of water in its manufacturing processes, having reached its previous one of 5.7 billion liters saved between 2014 and 2018. To achieve its new target, Gap engages manufacturing mills and laundries through its Mill Sustainability Program.

Since 2013, Gap has worked with facilities across its supply chain to implement water-saving solutions and monitor the use of chemicals and the discharge of wastewater. To this end, Gap has joined several initiatives such as NRDC' Clean by Design, the Sustainable Apparel Coalition, and the Partnership for Cleaner Textile program. The fashion leader also incorporates the Water Quality Program (WQP) for denim laundries to monitor and improve the quality of generated wastewater.

So far, Gap has partnered with several mill efficiency programs in China, Taiwan, India, Bangladesh, and others, and continuously monitors the environmental performance of facilities in its supply chain. The facilities working with Gap have reduced their water consumption by 20%. In addition to water quality and efficiency, Gap has committed to improving water safety and access through its Women + Water program. In partnership with USAID and other NGOs, the company educates its factory workers on the WASH safe water-handling practices and provides them with essential goods for hygiene upkeep.

Unilever

Unilever has committed to lowering its water footprint by addressing household water use, growing raw materials, and manufacturing. The company identified that 85% of its footprint comes from water used concurrently with its products, such as shampoos, toothpaste, and laundry detergents. In conditions where water is scarce, these products are used less frequently, which is why innovation in this area was important for Unilever.

As a response, the company has launched a product line that lowers water use. In 2018, Unilever introduced its Domestos Flush Less product, a toilet spray that acts as a disinfectant and deodorant and reduces the need to flush. The line was launched as a response to the water crisis in South Africa, one of the company's main markets.

That same year, Unilever created the Day2 dry wash spray for clothes with a savings potential of 60 liters of water per bottle. Other water-saving products include the Smart Foam rinsing technology for laundry that uses 30% less water than regular hand washing.

Furthermore, through its Knorr Partnership Fund, the corporation implements agricultural sustainability projects, with a special focus on drip irrigation techniques. For instance, a project was conducted with tomato farmers in Greece, where water consumption went down 28% between 2010 and 2017, while yield increased from 76 to 83 tonnes per hectare. Since 2008, Unilever has also reduced water use in manufacturing by 44% per tonne of production.

21,044,992 USD

10 years

AVERAGE SIZE AND FUNDING OF THE STARTUPS ON THE VALUER PLARTFORM THAT WORK TOWARDS CLEAN WATER FOR DEVELOPING COUNTRIES

VALUER Source: Valuer.ai Platform

Three Startups That Could Help Corporations Align With Goal 6

This publication demonstrates the way that Valuer helps corporations find solutions for their sustainability goals. For this purpose, we've included a selection of **three startups that can help corporations become sustainable in regards to SDG 6.**

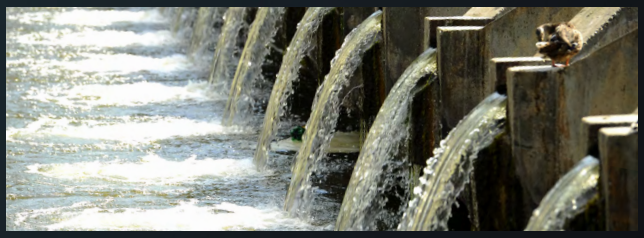
The format resembles the one our customers receive once their startup search is finalized. But, there's one very significant difference—**the selection here is a general example that doesn't take into account a corporation's unique needs.**

Puraffinity page 20

Puraffinity is a biotechnology company developing custom products that remove PFAS from water and wastewater.

TreaTech page 24

TreaTech is developing a patented solution for the disposal and recycling of sewage sludge and all types of wet waste.



Typhon Treatment Systems page 28

Typhon Treatment Systems delivers a comprehensive UV LED system for environmentally friendly water treatment.

Puraffinity

Puraffinity is a biotechnology company developing custom products that remove PFAS from water and wastewater.

Business logic:

Product Concept

The company's flagship solution is Customised Granular Media (CGM), a customizable, selective, sterile bio-based material targeted at removing per- and polyfluoroalkyl substances (PFAS) from water and wastewater. The material is based on processed cellulose that provides the structural properties and scaffold onto which the company attaches specific molecular receptors to bind with the target contaminants.

Business Model

Puraffinity develops and manufactures biologically-derived purification materials for water treatment with broad application across industries. Some of the potential markets that face severe contamination problems include airports, military bases, and chemical manufacturing, which the company defines as its primary targets.

Revenue Model

According to the company's most recent news, Puraffinity will be using the raised seed capital to accelerate scale-up and deploy its technology in global markets that demonstrate the need for solving the growing PFAS problem.

Summary:

- Puraffinity has developed a novel bio-adsorbent that can capture and remove highly resistant and very toxic microcontaminants from industrial wastewater.
- Their product is ten times more efficient in eliminating pollutants, has two times greater adsorption compared to traditional adsorbent materials, and is up to 40% cheaper than competitors.
- Following an oversubscribed seed round in 2019, the company rebranded, changing its name from "CustoMem" to "Puraffinity".
- The industrial wastewater treatment market is projected to reach $16.60 billion by 2026, according to research by Reports and Data.

LOCATION: London, United Kingdom

FOUNDED: 01/01/2015

FUNDING: 4,350,000 GBP

EMPLOYEES: 13

WEBSITE: puraffinity.com

BIOTECHNOLOGY

1

MATCH

IDEA | PRODUCT/ PROTOTYPE | **GO TO MARKET** | GROWTH & EXPANSION | ESTABLISHED

Meet the team:

HENRIK HAGEMANN

Co-Founder & CEO

As Puraffinity's CEO, Henrik Hagemann is in charge of the company's operations, technology prototyping, and business aspects. He co-founded the synthetic biology student society SynBIC during his studies at Imperial College London, where he obtained an MEng with a focus on Biomedical Engineering. Hagemann won the prestigious Royal Academy of Engineering 1851 Enterprise Fellowship and was the first two-time winner of the IET award. He was also named an MIT TR35 Innovator in 2018 and a Forbes 30 Under 30 in 2019.

GABRIELLA SANTOSA

Co-Founder & Advisor

Gabriella Santosa completed her BSc in Biochemistry at Imperial College London and won the WEInnovate@Imperial program, Imperial's pioneering entrepreneurial program for women, in 2016. Santosa has extensive experience in biotech, R&D, sustainable tech, and scientific entrepreneurship, which brought her to the Forbes' "30 Under 30 Europe 2019: Manufacturing & Industry" category.

Addressing PFAS Contamination With Novel Bio-Adsorbents

As water demand increases on a global scale, the need for smart water and wastewater management is becoming more evident than ever. Currently, wastewater is treated with methods that often do not detect microcontaminants, such as pesticides, pharmaceuticals, and high-performance chemicals, due to their small size and chemical properties.

For example, per- and polyfluoroalkyl substances (PFAS), also called perfluorinated compounds (PFCs), are a particularly stable, mobile, and toxic group of micropollutants. Even though these particles usually comprise a very small part of the total amount of pollutants present, they can render freshwater supplies unusable and cause lasting damage to human and environmental health.

Driven by a concern over this problem, a UK-based startup has developed a water purification technology for targeted capture of PFAS micropollutants from wastewater using nanocellulose-based biomaterials. The people behind this technology are two Imperial College London graduates, Henrik Hagemann and Gabi Santosa, who met at iGEM, the world's biggest synthetic biology competition. Coming out 2nd out of 245 university teams, they decided to move their idea to the next stage and joined the Imperial Enterprise Lab to develop their business plan. This resulted in the inception of CustoMem, in 2015, with the team naming the resulting flagship technology CGM for "CustoMem Granular Media." To reflect a broadening array of products beyond 'Customised Membranes', the company rebranded in 2019, changing its name to 'Puraffinity', which is a combination of *"Purification of water & environment and molecular affinity for targeted capture of chemicals."*

Customizable Biobased Material for Capturing and Recycling Micropollutants in Water

Puraffinity's novel bio-adsorbent selectively captures and removes PFCs or PFAS from water and wastewater using standard steel tank processing equipment. To achieve efficient removal, the CGM (which now stands for 'Customised Granular Media') combines biobased materials and organic synthesis with supra-molecular chemistry. CGM is primarily based on cellulose, an abundant organic polymer, which makes the treatment process eco-friendly. Their processed cellulose provides the structural properties and scaffold onto which specific molecular receptors can be attached to bind with the defined target contaminants.

Because each industrial case is different, the Puraffinity team can customize CGM depending on the condition on the influent water and the requirements for the effluent water. In proportion to the concentration of contaminants in the influent water, CGM can also require pre-treatment to prevent clogging.

According to the company, because of its PFAS-tailored technology, the solution is significantly more efficient in eliminating PFAS than non-specialized methods. Additionally, CGM comes with two times greater adsorption compared to traditional adsorbent materials. The technology is also up to 40% cheaper than its main competitors on the market, and can easily be installed with existing infrastructure as a plug-and-play solution.

"Our CGM's optimized performance allows faster flow rates and saves floor space, utilizing up to four times less plant footprint than activated carbon solutions. This provides significant cost savings to customers compared with traditional adsorbent materials like anion-exchange media and granular activated carbon,"

STATED HENRIK HAGEMANN, CO-FOUNDER AND CEO OF PURAFFINITY.

The cellulose-based CGM further allows for the components of the water treatment process to be recycled, and the captured waste to be disposed of safely. The adsorbent can be chemically regenerated using a non-hazardous proprietary wash, either for processing in other products or for incineration, thereby creating a closed-loop system for the business. As the solution is manufactured through sustainable biological production, CGM eliminates the need for harsh chemicals and does not produce any hazardous discharge in the completion phase.

Tackling the Water Quality Challenge Caused by PFAS Across Diverse Industries

Given that the CGM solution offers a promising method for wastewater purification, Puraffinity has garnered notable attention in Europe and beyond. In 2018, Hagemann made it to the "Innovators Under 35 Europe" list of the MIT Technology Review. The year after, both Hagemann and Santosa were named Europe's Forbes 30 Under 30 in the "Manufacturing & Industry" category.

The year of 2019 brought further success to the company. Namely, following an oversubscribed seed funding of $3.55 million, the company rebranded to Puraffinity and has been operating under that brand since. The lead investor in the round was Kindred Capital, joined by HG Ventures, the corporate venture arm of The Heritage Group of Indianapolis USA, the Swiss startup investors investiere.ch (Verve Capital Partners), and a number of prominent angel investors. On that occasion, Leila Zegna, founding partner of Kindred Capital, stated:

"We are delighted to have had the opportunity to invest in Puraffinity as we have been hugely impressed with the ambition, experience and innovative approach of their management team. We also see their new product as a pioneering development which leverages chemistry principles in an advanced way to provide a solution to a key environmental issue."

Puraffinity's adsorbent material can be of particular interest to industries where a significant amount of PFAS micropollutants are present, such as air transport, defense, and chemical manufacturing. The company already announced trials at one of the busiest European airports and further hints at partnerships with major players in the water sector.

Because of the significant applications of PFAS purification in various industries, Puraffinity is vying for the industrial wastewater treatment market. According to Reports and Data, this market is expected to grow to $16.6 billion by 2026 from an estimated $10.65 billion in 2018, while registering a CAGR of 5.8%. As the demand for water is substantially growing, with a recent Reuters report indicating that 56% of the world's population will face water scarcity by 2030, wastewater is gaining a lot of attention as a reliable alternative source and opening up market space for innovative companies like Puraffinity ▪

TreaTech

TreaTech is developing a patented solution for the disposal and recycling of sewage sludge and all types of wet waste.

Business logic:

Product Concept

TreaTech's solution to the disposal of sewage sludge is a process for thermochemical treatment of wet waste. Treated feedstock can include sewage sludge, as well as industrial wastewater, biomass residues, and brackish water. The system operates at supercritical temperature and pressure conditions that allow inorganic materials, such as phosphorus, to crystallize and separate. After sulfur removal, organic materials are processed to yield biogas. The water generated from the method is clean and compliant with regular standards.

Business Model

TreaTech's solution works on two ends: while it was developed for the disposal of different types of liquid wastes (e.g. sewage sludge) that are usually incinerated or landfilled, it also turns them into byproducts such as biogas, clean water, and mineral salts that can be further upgraded into phosphorus products. Clients that can benefit from the technology include municipal and industrial WWTP, desalination plants, pulp and paper industry, drilling, mining, hydrofracking, fermentation and methanation plants, and others.

Revenue Model

TreaTech has defined three revenue streams: (1) sale of the sewage treatment units, (2) annual maintenance fees of the units, and (3) a share of the sale of byproducts.

Summary:

- TreaTech's solution enables the disposal of liquid wastes and turns them into byproducts such as biogas, clean water, and mineral salts that can further be upgraded to phosphorus products (e.g. fertilizers).
- The basis of the TreaTech technology is a catalytic hydrothermal gasification reactor.
- The company is a two-stage winner of Switzerland's largest startup accelerator program Venture Kick.
- Technavio reported that the global sludge treatment and disposal equipment market will grow by $2.81 billion during the 2019-2023 forecast period.

LOCATION: Lausanne, Switzerland

FOUNDED: 01/01/2015

FUNDING: 5,800,000 CHF

EMPLOYEES: 4

WEBSITE: trea-tech.com

SUSTAINABILITY

WASTE MANAGEMENT

CLEANTECH

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Meet the team:

FRÉDÉRIC JUILLARD

Co-Founder & CEO

Frédéric Juillard holds an MSc in Biotechnology and Biomedical Engineering from EPFL and prepared his master's thesis in Biomechanics at the University of California, Berkeley. He spent two years as a research assistant for the IPESE group at the Swiss Federal Institute of Technology in Lausanne (EPFL) and in the IDYST group at Lausanne University. Juillard founded TreaTech in 2015 and after filing three patents and raising more than CHF 5.5 million, he co-founded two other companies in 2017 and 2019, which allowed him to acquire more entrepreneurial experience and new skills in business development.

DR. GAËL PENG

Co-Founder & CTO

Dr. Gaël Peng is a chemical engineer with a PhD in Energy Research from the Paul Scherrer Institute and Swiss Institute of Technology (EPFL). For his doctoral degree, Peng specialized in bioenergy and heterogeneous catalysis. He holds a BSc in Chemistry and Chemical Engineering, as well as an MSc in Chemical and Biochemical Engineering from the EPFL. He joined the team of TreaTech in 2016.

RAQUEL ZAMBRANO

Co-Founder & Lead Engineer

Raquel Zambrano is a chemical engineer who obtained an MSc in Chemical Engineering & Biotechnology at EPFL. She joined TreaTech in 2017, after doing an internship with Holdigaz SA, a major Swiss player in the energy industry.

DR. ALBERTO MIAN

Co-Founder

Dr. Alberto Mian is a mechanical engineer who has completed a PhD in Energy Research, with a specialization in numerical optimization of chemical and energy systems design, at the Swiss Institute of Technology (EPFL). Dr. Mian has led the technology optimization phase and plant scale-up of TreaTech, filing for the technology patent in 2015. He is also the co-founder of ExerGo, a Swiss consulting company in chemical processes, industrial engineering, and power generation.

TreaTech Turns Liquid Waste Streams Into a Revenue Stream

As water standards become increasingly stringent, wastewater treatment techniques are placed under the spotlight. One of the main concerns of current treatment methods is their byproduct known as sewage sludge. Left untreated, sludge can pose dangers to both human health and the environment. At present, more than 80% of the sludge is either incinerated or landfilled, causing 2.8% of global greenhouse emissions, and additionally taking up to 40% of total operating costs of sewage treatment plants (STPs). In Switzerland, 200,000 tons of sewage sludge is produced each year, causing incineration costs of around CHF 80 million.

To address this concern, the Swiss startup TreaTech is working on validating patented technology for processing wastewater sludge that is not only cost-friendly but can also generate valuable compounds in an environmentally friendly manner. The company was founded in 2015 by Frédéric Juillard at the Swiss Federal Institute of Technology in Lausanne (EPFL).

TALKING ABOUT HIS MOTIVES FOR STARTING TREATECH, FRÉDÉRIC JUILLARD ADDS:

> " I believe I belong to the generation whose duty is to change the way we approach problems and make the public aware of its responsibilities for the greater good. This is why I am so much into this project dealing with water management, and renewable energy production, two topics that I consider as fundamental necessities for today's civilization, and probably even more for tomorrow's world."

An Eco-Friendly Way to Make Valuable Material From Waste

The TreaTech solution involves a catalytic hydrothermal gasification (HTG) reactor that turns sludge from municipal or industrial sewage treatment into reusable gases, clean water, and useful salts. To do this, the system operates at supercritical temperature and pressure conditions that significantly decrease the solubility of inorganic compounds and allow them to crystalize and separate. In this way, valuable materials like phosphorus, and other metals as well, can be recovered. The following stage involves sulfur removal, after which the sludge is transferred to a catalytic gasification reactor. Thanks to the catalyst used in this step, organic materials are converted to biogas with a high fraction of methane. On top of these two groups of compounds, clean water is also a product of the process.

The TreaTech team plans to use its proprietary method to deliver on-site treatment solutions that are customized to clients' needs and can fit their existing infrastructure. As clients from different industries deal with the disposal of different types and quantities of wet waste, before installing its reactor, TreaTech engineers will evaluate the conditions through waste samples and inspections of technical parameters. Clients that can benefit from these solutions include those dealing with sewage sludge, industrial wastewater, biomass residues and brackish water originating from municipal and industrial WWTP, desalination plants, pulp and paper industry, drilling, mining, hydrofracking, fermentation and methanation plants, among others.

Notably, the technology requires no pre-treatment of feedstock and does not generate any leftovers, meaning it enables a 100% valorization of liquid waste. Phosphorus and salts can be purified and turned to agricultural fertilizers, and biogas can be used for energy. The company claims biogas with improved quality can be produced 1,500 times faster,

with up to 150% greater biogas yield in contrast to similar technology. Another environmental benefit of the TreaTech solution is that, compared to methods traditionally used for liquid waste treatment, such as incineration, it emits significantly less carbon dioxide. As the system can be installed on-site, it also eliminates costs associated with sludge transportation.

Currently, the TreaTech team has three patents related to the HTG process, as well as an exclusive license for its commercialization. To complement the technology, the startup also runs a software model that can simulate and predict the thermodynamics of the reactor based on different customer constraints.

TreaTech Is Targeting a Multi-Billion Dollar Market

TreaTech is developing the solution with many inputs from Swiss and French STPs, with plans underway to construct demonstration units at STPs in Villeneuve (Roche) and Geneva by 2021. The startup has also partnered with the Paul Scherrer Institute (PSI) and Pöyry, an engineering consulting company with strong expertise in the sanitation field.

To continue the development of the technology and demonstrate its use with a working model, in January 2019, TreaTech, in collaboration with PSI, was awarded a grant of CHF 4.4 million by the Swiss Federal Office of Energy. TreaTech will use the grant to build a 100 kg/hour pilot unit, which is a 100 times bigger than the prototype, by 2021.

> “ For the past year, we have tested several feedstocks and started creating relationships with customers and industrial partners. Today I can say that our solution has been validated by the industry. We are now very optimistic our solution will have a free space on the market and that customers are expecting our market entry soon. [...] We are in a business where a small startup with a bunch of engineers cannot succeed by itself. It’s important we stay open-minded and opportunistic regarding the relationships we will build in the coming months/years,”
>
> **SHARES JUILLARD.**

The company has so far raised circa CHF 800,000 from a seed round from Philip Morris Equity Partners, and a private Business Angel. In addition, it has collected upwards of CHF 580,000 in grants and cash prizes from the Gebert Rüf Foundation, the Bridge SNF Program, the Swiss Fondation pour le Climat, the European Horizon 2020 program, and through several contests.

In part, TreaTech owes its success to a surging global interest in innovative technologies for wastewater treatment and recycling. According to Technavio, the global sludge treatment and disposal equipment market size will grow by $2.81 billion at an estimated CAGR of 4.59% during the 2019-2023 forecast period. One of the key drivers of the market is the globally growing concern over the scarcity of water resources. Based on end-users, the market is segmented into municipal and industrial, with the municipal segment holding the largest sludge treatment and disposal equipment market share in 2018, contributing to over 79% of the market. This end-user segment will dominate the global market throughout the forecast period.

Typhon Treatment Systems

Typhon Treatment Systems delivers a comprehensive UV LED system for environmentally friendly water treatment.

Business logic:

Product Concept

The Typhon solution uses light-emitting diodes (LEDs) that emit UV light to remove harmful contaminants and microorganisms from continuous high flow rates of water. Exposure to UV-C radiation changes the DNA structure of microorganisms, rendering them inactive. The UV-LED reactor can carry out two main processes: (1) UV Disinfection, to inactivate a wide range of harmful microorganisms, and (2) AOP, Advanced Oxidation Process, to remove hard to treat contaminants such as pesticides, pharmaceuticals, and taste and odor compounds.

Business Model

The key value proposition of the Typhon system is that it provides a low-cost, eco-friendly, and efficient alternative to traditional mercury lamps. According to Typhon, over the whole product lifetime, their solution is reliable and can generate substantial savings in both energy costs and maintenance, compared to more traditional UV technologies. The company operates with a B2B model, offering its solutions to water utilities, a wide range of industrial clients, and private water supply cases.

Revenue Model

Typhon focuses on supporting its clients through the whole lifecycle of its solution. To that end, the company generates revenue by supplying its equipment to clients, as well as providing equipment maintenance with service level agreements and aftersales. Given the nature of the rapidly developing UV LED market, Typhon also offers an Engineering Consultancy service, working with customers to develop bespoke water treatment solutions that incorporate the UV LED technology.

Customers

LOCATION: Cumbria, United Kingdom

FOUNDED: 01/01/2014

FUNDING: $450,000

EMPLOYEES: 10

WEBSITE: typhontreatment.com

NATURAL RESOURCES

ENERGY

WATER

ENERGY EFFICIENCY

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Summary:

- Typhon Treatment Systems builds a reactor that harnesses UV LEDs in a simple to operate, safe and efficient way.
- The company's patent-pending solution can disinfect and purify drinking water through the processes of UV Disinfection and Advanced Oxidation.
- Typhon has received a distinction in the "Breakthrough Technology Company of the Year" category at the Global Water Awards 2019.
- A report by Markets and Markets projects a CAGR of 12.3% from 2020 to 2025 for the global UV disinfection equipment market.

Meet the team:

PETER MCNULTY

Co-Founder & CEO

Mr. McNulty brings extensive experience from several previous positions in the water treatment industry, including founding and managerial positions at N.E.I. Treatment Systems. When co-founding Typhon, he transferred from the role of Director for Water Resources at Good Earth Power. Mr. McNulty is also skilled in marine engineering and operations, with a degree in Industrial Engineering from Lehigh University.

DR. MATTHEW SIMPSON

Co-Founder & Managing Director

Since the company was established, Dr. Simpson has held the position of Managing Director and is focused on overall business development and operations. Prior to founding Typhon, he held the position of Division Director at Bergstan, in addition to various other engineering positions. Dr. Simpson obtained his PhD in Water Treatment and Supply from Newcastle University.

UV Water Disinfection With a Twist

Clean, safe drinking water is essential to life. One approach to water purification and treatment is the use of UV Disinfection, which has proven to be effective at inactivating harmful microorganisms that may be present even in water passed through other treatment stages. However, traditional UV Systems use mercury vapor discharge lamps and are considered power-hungry, time-consuming to maintain, and prone to component failure. What is more, the lamps can break and release toxic mercury into the water supply. Although the UN Minamata Convention has banned the use of mercury in most electrical and electronic hardware, in the absence of a viable alternative, UV lamps have continued to rely on mercury for light generation.

Since its foundation in 2014, UK-based Typhon Treatment Systems has been on a mission to create a high-efficiency, low-cost alternative to existing UV technologies. Typhon founders Peter McNulty and Dr. Matthew Simpson first conceived of the idea while working on an off-grid municipal-scale water project in Nigeria. The need for electrical efficiency, safety, and simple operation inspired their investigation of utility-scale UV LED water treatment equipment. Following years of development, Typhon unveiled its US EPA-validated UV LED System in 2019.

A REPORT PUBLISHED BY MARKETS AND MARKETS IN MARCH 2020 FORECASTS A MARKET CAGR OF

12.3%

IN THE PERIOD BETWEEN 2020 AND 2025.

> “ After five years of research and development, Typhon is very pleased to be introducing this technology in 2019. The rate of improvement in performance and cost of UV LEDs, as well as the ongoing refinement of the reactor technology, indicates we are on our way to competing with a growing variety of UV water treatment applications,”
>
> **SHARED MCNULTY FOR ENVIROTEC MAGAZINE.**

Wide Application Range: From Municipal to Industrial Water Treatment

While trials on UV LED disinfection solutions have been running for some time now, the main purpose behind the work of Typhon’s team is to create a system that will be energy efficient at high flow rates while remaining cost-friendly. At the core of Typhon’s patent-pending solution is a simplified reactor with optimized optical and hydraulic capabilities. The reactor is built to carry out two main processes: (1) UV Disinfection, and (2) Advanced Oxidation.

Using the Advanced Oxidation Processes (AOP), the system can remove recalcitrant micropollutants such as metaldehyde, geosmin, N-Nitrosodimethylamine, and others from drinking water. As for the treatment of microorganisms, the Typhon UV Disinfection method can inactivate multiple biological pathogens, including Cryptosporidium (and other chlorine-resistant pathogens), E. coli, and Legionella, among others.

"Until now, the only way of using UV to treat the huge volumes we need has been using traditional technology that uses mercury in glass bulbs. But with the potential to be up to 90% more energy-efficient, as well as more reliable, easier to maintain and safer, Typhon's new LED version was a brilliant idea we wanted to develop,"

NOTED KIERAN BROCKLEBANK, HEAD OF INNOVATION AT UNITED UTILITIES.

Today, one of the main applications for these methods is the treatment of municipal drinking water. However, UVC-LED technology also has growing potential within municipal and industrial water reuse and wastewater applications. Industrial applications in particular benefit from the unique properties of LEDs, including semiconductor ultra-pure water de-chlorination, bottled water disinfection, and pharmaceutical manufacturing.

The company claims that both for municipal and industrial applications, the Typhon UV LED system is a low-maintenance, low-cost, and eco-friendly alternative for UV mercury lamps. For one, LED technology can be used at different wavelengths of light to increase the efficiency of the treatment process. According to the team, Typhon's UVC-LEDs incorporated into a UV reactor offer several additional advantages to customers, including whole-life cost savings, increased asset capacity and reliability, instant ON/OFF, no lamp scaling, and most importantly, the complete removal of mercury from the UV system.

The Need for Clean Water as the Main Driver of the UV Disinfection Market Growth

Throughout its journey, the company has received significant support and recognition from leaders in the field. In 2017, Typhon was among the seven finalists of the United Utilities Innovation Lab. Through the program, the team was able to advance its solution by using the water giant's vast databases and systems, as well as their industry know-how.

In 2018, Typhon also signed a partnership with UU, who now applies the product to their water treatment plants.

Accolades include a distinction in the "Breakthrough Technology Company of the Year" category at the Global Water Awards 2019. Back in 2014, the company also collected a grant award from the UK Innovus Technology Investment Fund in the amount of $450,000. The first equity financing round for the company took place in 2016, and the most recent one in 2019, led by the corporate venturing subsidiary of Aramco, Saudi Aramco Energy Ventures (SAEV).

As the need for safer water rises on a global scale and investors continue to eye new technological opportunities, the market for UV disinfection equipment is predicted to see an upward trend in the coming years. A report published by Markets and Markets in March 2020 forecasts a market CAGR of 12.3% in the period between 2020 and 2025. At this pace, the market's size will move from $2.9 billion at the beginning to $5.3 billion by the end of the forecast period. Key drivers of this growth include the increased risk of infectious diseases and the need to properly dispose of toxic waterborne chemicals.

In this favorable market climate, Typhon has already positioned its technology to compete with a growing variety of UV water treatment systems. In addition to developing and refining its existing technology, the company is constantly working to develop new solutions across a broad spectrum of applications.

Conclusion: Key Takeaways and What We Expect in the Future

This publication was created to promote the idea that companies can become more environment-friendly in a way that lowers costs, generates additional revenues, and opens the doors to new markets.

Focusing on SDG 6: *Clean water and sanitation, it stresses the benefits that can emerge when large organizations align their operations with the goal's ambitions by adopting innovative technology.*

These are some of the report's key takeaways:

1. Technological innovation is imperative to achieving the SDGs: We're moving too slowly and struggling to keep pace with the growing societal needs. In this regard, technological breakthroughs and creativity hold the highest potential for reducing the time and cost necessary to achieve results.

2. Startups can help corporations become more sustainable: Since startups are inherently innovative, large organizations can benefit greatly by collaborating with them. This is one of the most promising ways of finding the right sustainability-related technologies that work for them.

3. A growing number of companies are announcing water stewardship programs: Understanding the threat water stress poses to their operations, cost base, and license to operate, many leading companies have developed water stewardship strategies. Some of the benefits of those programs are obvious—they tend to reduce costs, lower risk profiles, bring competitive advantage, and open the doors to new market opportunities.

4. Saving Water Saves Money: For companies, the value of achieving water efficiency is much bigger than that of not taking action. A failure to address SDG 6 could lead to significant disruption for global supply chains, with agriculture and manufacturing at particular risk.

5. Companies can expect numerous benefits from water sustainability: From improved brand image and employee retention rate to increased financial performance and resilience to water scarcity. Furthermore, companies will be able to meet changing regulations in a timely manner and avoid penalties under their state's environment legislature.

6. There are steps companies can take to make aligning with SDG 6 easier: The recommendations on how companies can make aligning easier starts with a detailed water audit. Once they learn their water footprint, organizations are advised to define priorities, outline specific KPIs, announce their plans, and achieve business growth through innovation and collaboration with other companies.

7. The global industrial wastewater treatment market will advance at a CAGR of 5.8% between 2019 and 2024: The market was projected to reach $15 billion by 2024 from $11.3 billion in 2019. Some of the technology currently trending includes chemical treatment based on biocides and disinfectants, novel anaerobic digestion (AD) processes, and electrochemical oxidation.

8. The global smart water management market is expected to reach $21.4 billion by 2024: The market will be growing from an estimated $11.7 billion in 2019, at a CAGR of 12.9%. The segment expected to hold the highest share is the "enterprise asset management" one, owing to the increasing adoption of real-time condition monitoring and predictive maintenance of assets.

9. Innovative solutions are reducing the environmental impact of agriculture: According to McKinsey, startup investments in agritech grew 43% in 2018. Furthermore, the smart agriculture market was valued at $7.53 billion in 2018 and projected to reach $13.5 billion by 2023. On the other hand, the smart irrigation market is set to reach almost $1.8 billion by 2023, growing at a CAGR of 16.3% between 2017 and 2023.

10. Organizations are approaching sustainability from different angles that make the most sense to their ambitions and stakes: The report includes the stories of Grundfos, Gap, and Unilever as some of the large organizations that are successfully aligning their operations with SDG 6.

The Company of the Future is **Sustainable**

As the Harvard Business Review once put it: There's no alternative to sustainable development. The increasingly evident climate change and its resulting stricter regulations, coupled with the modern needs of the informed customer, mean that business-as-usual won't cut it anymore. Fortunately, **this new reality doesn't only bring threats, but also numerous new business opportunities to those that embrace it on time.**

IN SUPPORT OF OUR CONCLUSION, A STUDY CONDUCTED BY HBR POINTS OUT THAT:

"Sustainability is a mother lode of organizational and technological innovations that yield both bottom-line and top-line returns. [...] In fact, because those are the goals of corporate innovation, we find that smart companies now treat sustainability as innovation's new frontier."

Valuer Helps Corporations **Blend Purpose With Profit**

There's no one-size-fits-all approach to sustainability. This is why it's essential that each organization approaches the challenge from a perspective that makes the most sense to its individual strategies.

By finding startups with innovative solutions that complement a corporation's unique needs, the Valuer AI platform helps organizations adopt the most compatible sustainability-related technologies.

The platform's data-driven approach empowers companies to identify previously unseen trends and opportunities within their sector, enabling a move from a cost-cutting focus into opportunity-driven profit generation.

Learn more about how the Valuer AI platform works on page 4.

ACTIVATE THE VALUER RADAR

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