



MARCH 2020

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# CSO

Chief Sustainability Officer



**Watercare**

An Auckland Council Organisation



**EXPERIENCE DESIGN,  
ENTERPRISE AND  
CULTURAL AGILITY**

Providing 1.7 million people  
with outstanding water services  
through digital transformation

**TOP  
10** ▶

**LNG  
companies  
by market  
capitalisation**

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**BIZ**  
WITH

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H&M

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**C3.ai transforms  
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**W**elcome to the March issue of CSO Magazine!

This month's cover story focuses on Auckland Watercare Services, the largest water utility in New Zealand. We spoke with Chief Digital Officer Rebecca Chenery, along with Paul du Quaasteniet and Peter Johnston from its Strategic Transformation Programme team, about technology's role in boosting efficiency, resilience and customer centricity. "Becoming customer-centric today means more than being reliable and efficient – it means being fast, flexible and responsive to the changing needs of Aucklanders," says Chenery.

Back in November, we had the privilege of attending Web Summit 2019 and spoke to a number of leading executives from around the globe. Two features this month are based on those interviews: one with Lise Kingo, CEO of the UN Global

Compact, and the other with H&M's CSO, Anna Gedda. While Kingo elaborates on the strategies, goals and successes of the Global Compact's work, Gedda offers fascinating insights into the ways H&M is leading the fight for sustainable fashion.

Elsewhere, we spoke with innovative Dutch chemtech company Avantium on the challenges of introducing plant-based plastics to the drinks industry and the numerous benefits it could bring.

This month's Top 10 takes a look at the world's leading LNG companies, while our Events and Associations section highlights some key dates for your diary.

Do you have a story to tell?  
get in touch at

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Enjoy the issue!  
Marcus Lawrence

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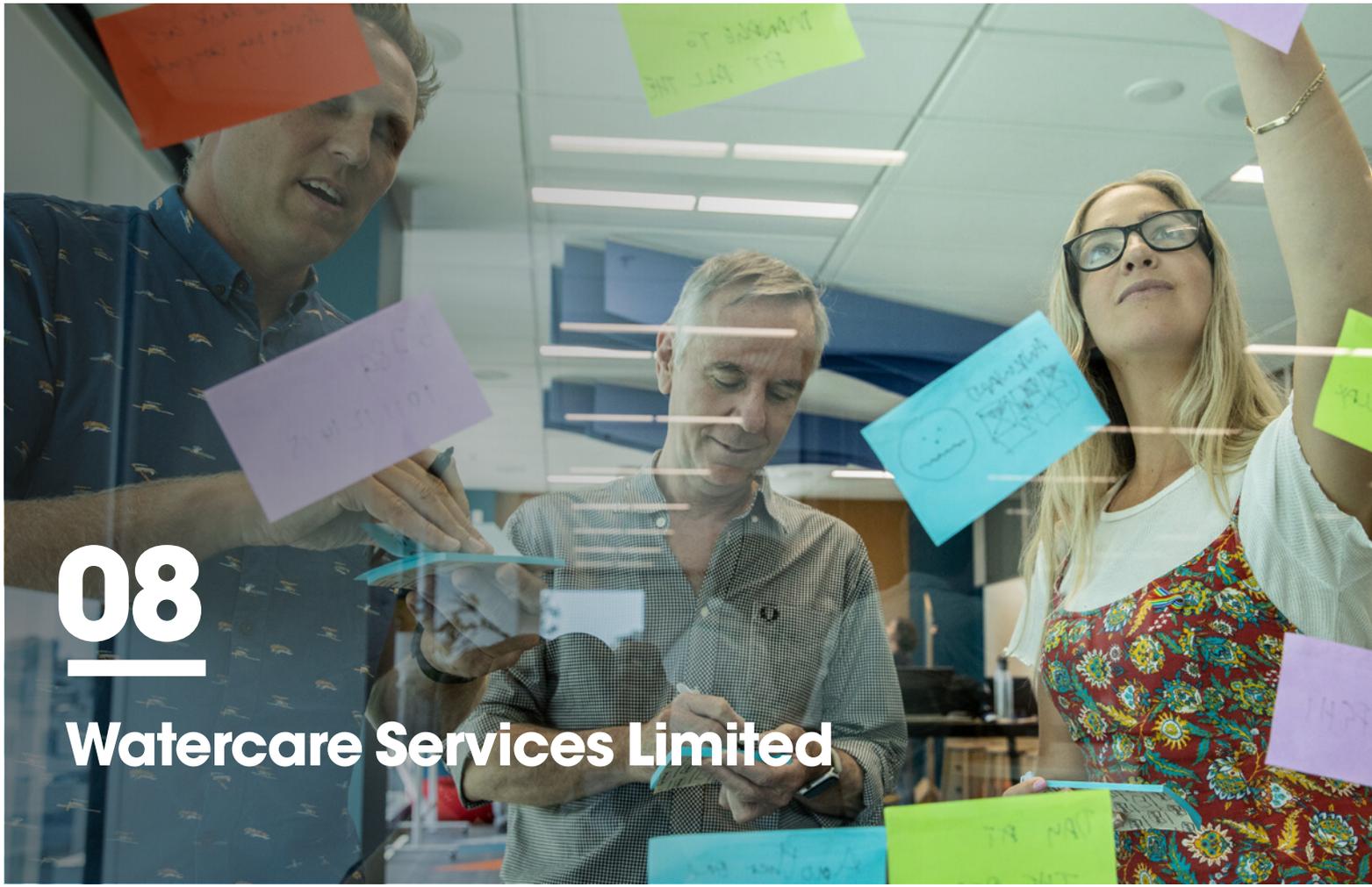
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**08**

**Watercare Services Limited**



**STRIVING FOR  
A BETTER WORLD  
WITH LISE KINGO,  
UN GLOBAL  
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**HOW TECH  
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THE 3 RS:  
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08

# EXPERIENCE DESIGN, ENTERPRISE AND CULTURAL AGILITY IN AUCKLAND WATERCARE'S DIGITAL TRANSFORMATION

WRITTEN BY  
**RACHAEL DAVIS**  
PRODUCED BY  
**STUART IRVING**



Clear All Alarms

Reply with A16 to ACK

Retry ID:15 Alarm: WTP301-  
AIT90331D.LoLo\_Alm-DSC,  
Raglan WTP Filtered  
Water Final Chl LoLo at:  
21/10/2019 3:43:55 p.m.  
Reply with A15 to ACK

Retry ID:16 Alarm: WTP301-  
AIT90332D.Deviation\_Alm-  
DSC, Raglan WTP Filtered  
Water Final pH Deviation  
Fault at: 21/10/2019 3:47:00  
p.m. Reply with A16 to ACK

Retry ID:15 Alarm: WTP301-  
AIT90331D.LoLo\_Alm-DSC,  
Raglan WTP Filtered  
Water Final Chl LoLo at:  
21/10/2019 3:43:55 p.m.  
Reply with A15 to ACK

Retry ID:16 Alarm: WTP301-  
AIT90332D.Deviation\_Alm-  
DSC, Raglan WTP Filtered  
Water Final pH Deviation

## Auckland's Watercare, New Zealand's largest water utility company, provides the city's 1.7 million people with clean water and reliable wastewater disposal. We spoke to Rebecca Chenery, Paul du Quaasteniet, and Peter Johnston about Watercare's innovative digital transformation

**I**n 2010, Watercare consolidated seven water utility companies in Auckland to create a more consistent, better managed system for the city's residents. Watercare quickly built a solid track record in infrastructure and service delivery, but Raveen Jaduram, Watercare's Chief Executive Officer, has over the last several years focused on putting customers at the heart of the business. According to Chief Digital Officer Rebecca Chenery, "becoming customer-centric today means more than being reliable and efficient – it means being fast, flexible and responsive to the changing needs of Aucklanders". This sentiment is the driving force behind the digital transformation and application of technology underway at Watercare.

The multi-year transformation has been led by Raveen Jaduram and his Executive team, knowing that, for real change in mindsets and culture to occur, it needed to be led and modelled from the top.





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# Going digital – it's do or die in today's modern landscape

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Digital transformation is certainly a hot topic and is driving conversations at the executive table around:

- Digitising customer experiences
- Increasing speed to market
- Moving to Agile working environments
- Lowering costs
- Increasing quality

TTC is a NZ owned software assurance provider with a focus on enabling organisations across the globe to transform the way they deliver technology. TTC teams enable robust and rapid test program delivery that helps organisations increase the speed and quality of technology deployment while reducing risk and cost. Deploying a continuous testing platform provides the fundamentals of automated testing, test data management and continuous deployment across any technology landscape in any industry and for any company size.

## Digital or die

Digital is very simple from the customer's perspective (let me transact whenever and from wherever I am), but often highly complex in practise – this is where automated and continuous testing becomes vital. Without it, executives do not have visibility or control of the quality of their IT program and suffer poor speed to market and increased risk.

## The world won't wait

Many industries use complex, cross-functional systems, which can slow down the launch of new products and services. TTC believes you can get a head start by investing in a continuous testing platform that is easily understood and implemented. This investment provides tangible value and lasting benefits including re-usable test assets for project and postproduction use, security of IP and less reliance on individuals.

## The typical outcomes are:

- Test cycle times reduced from 10 weeks to 3 days
- Business risk coverage increased from 30% to 90%
- Improved data and environment management
- Easier engagement and visibility with development suppliers
- Decreased cost of testing ownership
- Increased and retained value of testing assets
- Ongoing operational monitoring
- Integrated test and business process automation

## Testing culture for today's IT program

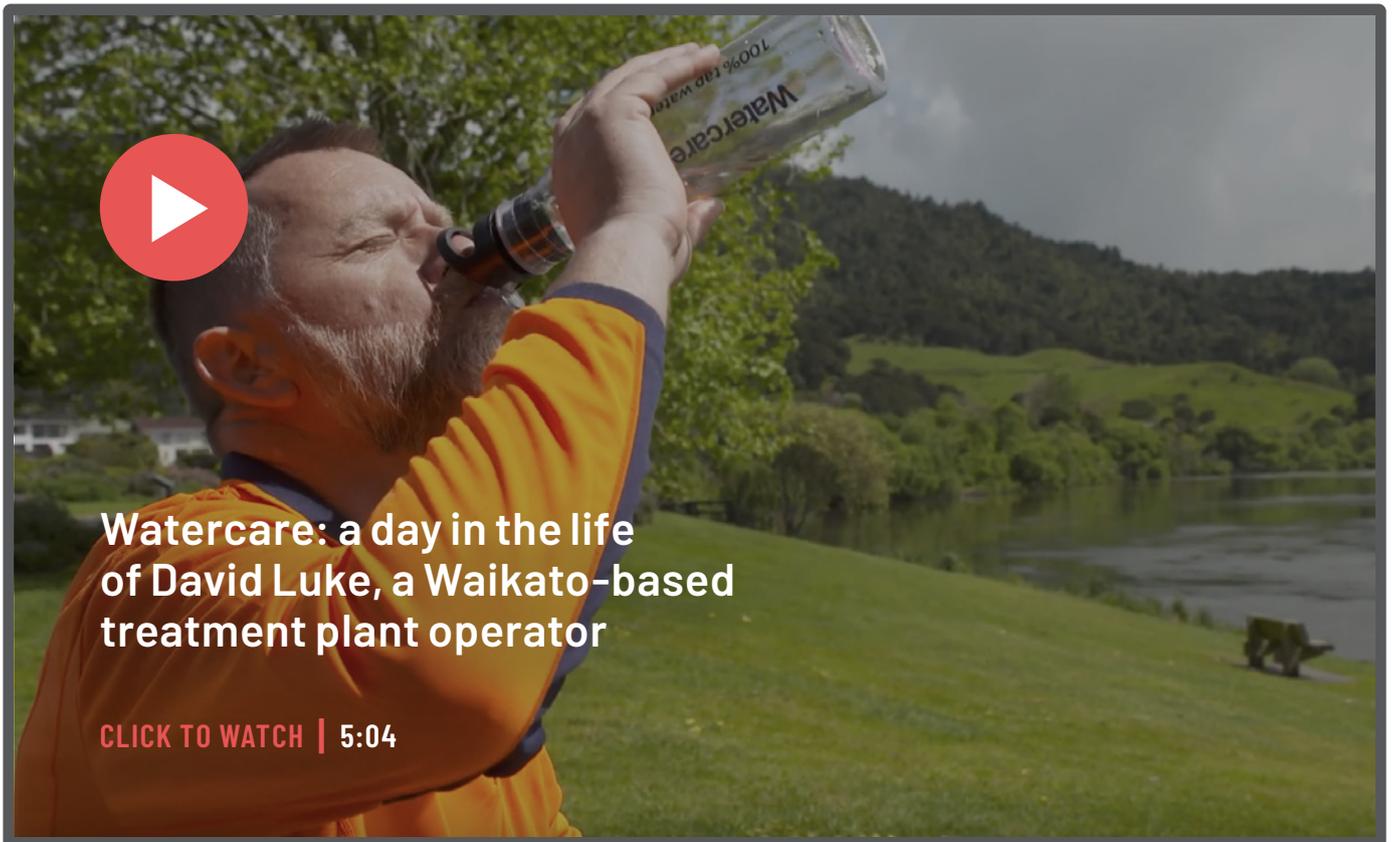
Most organisations must deliver their IT programs via a variety of traditional or modern delivery methods. Recently, common themes include Agile, DevOps and cloud computing as key enablers of going digital. The goal is to enable cross-functional, highly co-ordinated teams to deliver a digital improvement in very short cycle times. An automated and continuous test platform is key in today's fast-moving, risk adverse world.

## Remaining competitive

A common goal and outcome is to reduce an organisation's cost base by at least 10%. Manual testing (and the by-product of incomplete testing) typically consumes 29% of an IT budget. TTC delivers an automated and continuous test platform that will bring significant and repeating return on investment. With specialised testing consultants in offices around the globe, TTC assists all organisations in delivering modern, universal testing programs resulting in higher quality software, faster time to market, reduced costs and lower risk.

[Learn More](#)





Watercare: a day in the life of David Luke, a Waikato-based treatment plant operator

CLICK TO WATCH | 5:04

## “THINK OPENLY, SOLVE PROBLEMS DIFFERENTLY, AND COLLABORATE”

—  
**Rebecca Chenery,**  
Chief Digital Officer,  
Watercare

The company’s Strategic Transformation Programme, of which Paul de Quaasteniet is the Programme Director and Peter Johnston is Enterprise Change Lead, represents an overhaul of ways of working, technologies and

how data is leveraged across the business. To meet the targets set out in the programme, a collaborative attitude has been essential, together with the combination of multiple teams from across the business. For example, Watercare did not want to create an ‘innovation bubble,’ but a cooperative, communal environment where opinions are valued and voices are heard. “For an organisation like Watercare, which has had a number of long-tenure staff and legacy ways of working, the culture shift has been substantial,” affirms Chenery.

A key way in which the company's management team drove this change in working culture was through the creation of a new co-working space, The Hub, which Chenery says "provides a place for people to meet, eat, work and host visitors – to use as they see fit." The notion of a shared, multi-purpose space was new for Watercare. It was an initial signal that the culture was changing into more of a creative environment, led by new ideas and collaborative working. Additionally, Watercare placed key leaders through a tailored leadership programme, and provided staff with Agile Fundamentals and Design Thinking training and on-the-job learning. This has ensured that employees

are poised for greater success moving forward by creating an agile mindset that encourages thinking openly, solving problems differently, and greater collaboration.

"We have seen a big shift in how teams have removed functional barriers, found a common goal and pooled efforts in the same direction – these new attitudes and skills in working inside and across teams has been fundamental," says Johnston.

"The Strategic Transformation Programme gave the foundation for three aspirational outcomes," says de Quaasteniet. "These are: that the customer can do everything for themselves wherever they are, in a single

## EXECUTIVE PROFILE

### Rebecca Chenery

As Watercare's Chief Digital Officer, Rebecca Chenery is responsible for leading all technology aspects of the business along with Watercare's business transformation programme. She has many years of experience in leading teams to deliver exceptional business outcomes across the financial services, telecommunications and water industries in New Zealand and overseas.





interaction; that our people have the right tools, best processes and are empowered to do their jobs; and that they are able to make insight-informed and fact-based decisions with confidence.” Through streamlining processes and improving staff skills and attitudes in working with data, Watercare is now able to use its insights to make informed decisions that are more predictive than reactive and ultimately improve customer experience.

In terms of technology, the transformation has involved the successful replacement of the customer, billing, and

financial systems; an automated marketing solution for internal and external communications teams; a new enterprise asset management system for the operations side of the business; and a planning and insights solution for analysing population and growth data to see where Auckland’s major growth is occurring while assessing how to best respond. With the help of specialist partners, robotic process automation (RPA) technology has been implemented across key business processes, helping Watercare’s people to use and see benefits from integrated technology.

“Our squads have also been working with our business support areas, such as Health, Safety and Wellbeing and Human Resources. We have automated the transactional parts of these functions to free our professionals up to do what they are here to do: support our leaders and our people to be at their best,” says de Quaasteniet.

These new technologies have been pushed out through the new approaches towards culture, delivery and change

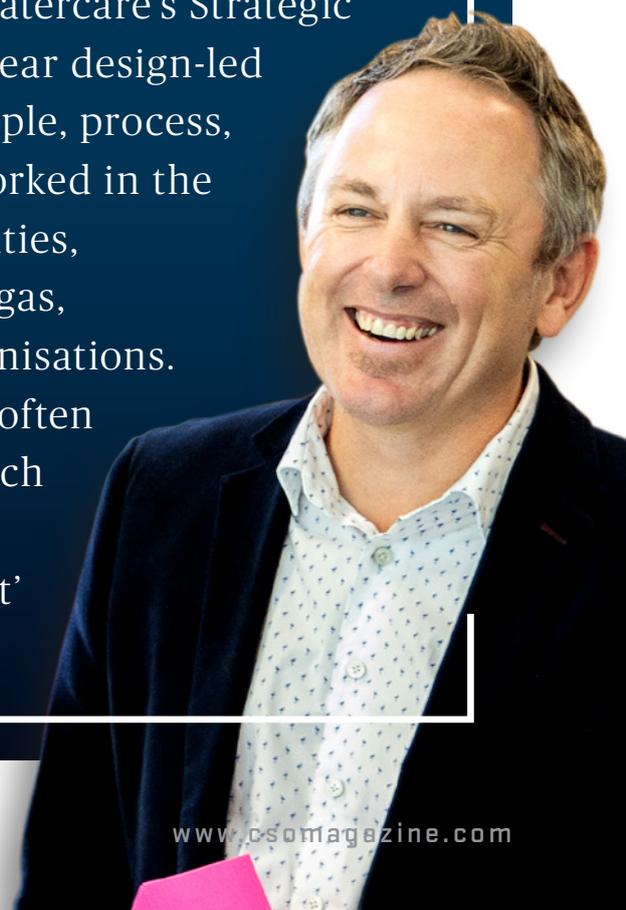
management introduced by the Strategic Transformation Programme. For example, the development of its platform strategy, hosted by AWS, will future-proof Watercare’s core technology needs and allow the organisation to respond to and introduce new solutions to long standing problems.

One essential innovation is Watercare’s Data Hub. Established on the new, AWS-hosted platform, the Data Hub brings together data that

## EXECUTIVE PROFILE

### Paul du Quaasteniet

Paul is a transformation leader focusing on digital strategy, operating model transitions and organisational change implementation. He’s currently leading Watercare’s Strategic Transformation Programme (STP), a two-year design-led digital reinvention programme across people, process, data and technology domains. Paul has worked in the Middle East, Asia and New Zealand in utilities, manufacturing, consumer products, oil & gas, transportation & logistics and health organisations. Paul believes that transformation success often comes down to being human-centred, which requires strong leadership, nimble, cross-functional teams and a ‘safe to experiment’ working culture.



**“DESIGNING FOR A GREAT EXPERIENCE — USING NEW DISCIPLINES LIKE HUMAN CENTRED DESIGN, WHICH REQUIRES STRONG TEAMING AND EVEN STRONGER LEADERSHIP — WILL KEEP WATERCARE IMPROVING INTO 2020 AND BEYOND”**

**Peter Johnston,**  
Enterprise Change Lead for the Strategic  
Transformation Programme, Watercare



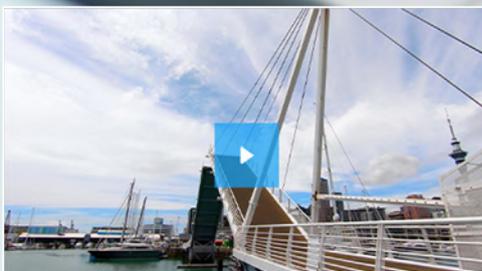


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## “IT WAS AN END-TO-END REPLACEMENT OF OUR CORE SOLUTIONS, WITH A VIEW TO PULLING OUT THE DATA AND USING IT TO DRIVE BETTER DECISION MAKING ACROSS THE ORGANISATION”

—  
**Paul de Quaasteniet,**  
Strategic Transformation  
Programme Director, Watercare

was previously scattered across the business into one accessible visualisation layer, making it available and digestible for every employee. It also facilitates the exchange of information with external organisations and agencies, such as Auckland Council.

Data Hub supports Watercare’s principles of “data availability, quality, stewardship and governance,” which de Quaasteniet says has resulted in “a shift in how people use data, come together across the Data Hub and drive insights.”

“As an example, we are rolling out IoT across key parts of our network, and

### PROFILE

#### **Peter Johnston**

Peter is a strategy, business design and transformation specialist who leads the organisational change management component of the transformation programme. Peter’s run business consulting teams across Europe, the UK and Australasia, having recently established and led the IBM iX consulting practice in New Zealand. Peter applies behavioural science and design research to help transform the customer experience, and to help make work more meaningful and rewarding. Establishing strong leadership and teaming to improve creativity and innovation is a big focus of his work.





streaming data through our Data Hub. This enables our data science team to uncover insights that will allow the operational teams to save money, save water, and increase customer satisfaction,” he adds. “Having the right partners on the journey was critical. The fresh talent from Harmonics has accelerated our shift towards a data-driven culture. TTC has helped move our test automation from zero to over 80%, seriously raising our Quality game”

Attracting and nurturing top talent has been central to implementing

a large and complex programme of work. “Having clear career steps and implementing badge systems to provide an evidence-based route to professional progression is important. We have needed to give our talented technical people pathways to build their skills that don’t necessarily end up in ‘people management’. We are competing hard in the market for these new skill sets – Data Science, Behavioural Science – and we need to give these people lots of room for growth and development,” says de Quaasteniet.



The change has been significant. Now, instead of new tech projects taking one to three years to complete, with the new platform and ways of working, Watercare can deliver change in substantially less time – weeks and months rather than years. Another component is the organisation’s automated testing platform, which minimises the spend on testing from 30% of the budget to under 10% while quadrupling the efficiency and speed of testing. Partnering with the right experts who can help augment its capability has been a critical aspect of the success of Watercare’s technology quality drive.

The next step for the Data Hub is the development of the Nerve Centre – Watercare’s ‘air traffic control tower’ which is both physical and technical. Visualisation will be key to its operation, with large screens and interactivity bringing together different aspects of the organisation through the application of data. Ultimately, the Nerve Centre will provide a predictive layer to the maintenance of Auckland’s water supply so Watercare can preempt problems or identify them early, allowing for timely maintenance.

# 1993

Year founded

# 1.7mn+

Aucklanders provided with lifeline services daily

# 1,000

Number of employees

“THE CULTURE CHANGE IS THE FOUNDATION OF EVERYTHING THAT WE HAVE BEEN ABLE TO DO”

Rebecca Chenery,  
Chief Digital Officer,  
Watercare

The end-to-end mural provides a summary of the key aspects of the aspirational future.  
The mural depicts a story from initiation of planning in response to customer demand, through asset implementation, customer use and ending with decommissioning, invoking the experience of a range of external and internal stakeholders.  
Above the “river” depicts the key external (customer / stakeholder) stories, the river are the internal stories.

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Looking ahead, Watercare will continue to focus on digital innovation. “Keeping ahead of technological advances, scanning the market inside and outside of the water industry, and trying to raise digital literacy across staff are core expectations of the Digital team,” explains Chenery.

The digital transformation that Watercare has experienced has enabled it to remain at the forefront of new technologies which provide the foundations for innovation. Through the implementation of innovative technology, the organisation is able to deliver

an improved, more sustainable digital experience than before, and implement change more quickly and effectively. “Everything we have done, whatever outcome we needed to deliver, has been focused on our people and our customers,” says Chenery. “The culture change is the foundation of everything that we have been able to do.” ■

**Watercare**   
An Auckland Council Organisation







# STRIVING FOR A BETTER WORLD WITH LISE KINGO, UN GLOBAL COMPACT

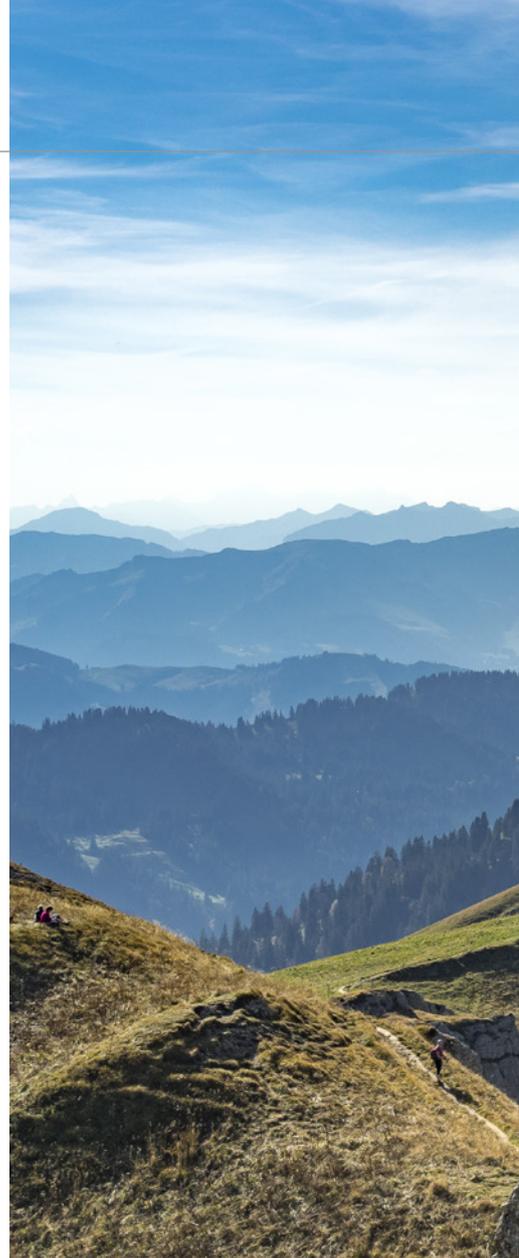


At Web Summit 2019, we spoke with Lise Kingo, CEO and Executive Director of the UN Global Compact, about the state of the SDGs and how companies can do their bit for a fairer, safer, and cleaner world

WRITTEN BY  
**MARCUS LAWRENCE**

Last November, we had the pleasure of traveling to Lisbon, Portugal for [Web Summit 2019](#), the world's largest tech event. Alongside insightful talks from such varied speakers as Michel Barnier, Wladimir Klitschko, Jessica Ennis-Hill, Kate Brandt (Google's CSO), Brad Smith (President at Microsoft), and Guo Ping (Rotating Chairman at Huawei), the event was replete with thought leaders serving as fonts of modern business knowledge.

Perhaps most excitingly for us at CSO Magazine, we had the opportunity to speak directly with a true heavyweight in the global push for sustainable business: Lise Kingo, CEO and Executive Director of the United Nations Global Compact. The UN's Sustainable Development Goals (SDGs) - a 17-point summary of the most pressing issues worldwide that must be addressed by businesses and governments in order to build fairer, safer and more environmentally friendly societies - is primarily championed by the Global Compact. As of 2020, it is the world's largest corporate sustainability initiative, with a staggering 10,409 companies across 173 countries pledged to align with the UN's framework for sustainable and ethical business operations. While this aim is tailorable to a specific entity's own operations, from sustainability in supply chain to finance, a key element of the Global Compact's work is to nurture and support





**“We are now preparing a new initiative that we call the SDG Ambition, which is about helping companies across the world through our local networks to set specific targets, and to really have an ambition and specific goals”**

—  
**Lise Kingo,**  
CEO and Executive Director,  
UN Global Compact

**“It’s more fun to be proactive than to be reactive”**

—  
**Lise Kingo,**  
CEO and Executive Director,  
UN Global Compact

enterprises in their moves towards the realisation of the 2030 SDGs, thereby serving as a significant catalyst for change around the world.

Kingo has long been a champion of sustainability. Before taking up the reins at the UN Global Compact in 2015, she worked at global health-care company Novo Nordisk for just over 26 years and completed an MSc in Responsibility and Business Practice at the University of Bath, UK. Her roles at Novo Nordisk, culminating in becoming Executive Vice





President at the firm, included serving as Director of Environmental Affairs and Senior Vice President of Business Support. During this time, she established NovoZymes' first strategy on sustainability, a considerable and beneficial undertaking for a company worth 11.7bn Danish krone by 2017. Kingo is also an [International Gender Champion](#) (IGC), enshrining her commitment to driving gender equality within the UN Global Compact just as her fellow signatories work for the same cause throughout their own organisations.

“There are unconscious and conscious factors influencing gender bias in business and concrete ways leaders can unwind them. Adopting a mindset of a gender champion is a first step,” says Kingo on the IGC website. “If business leaders can shift from unconsciously gender-biased decisions to consciously championing women, imagine the possibilities for women to be treated fairly at work, rise through development opportunities, and increase the health and safety of both women and men in the workplace.”



At Web Summit, we were fortunate enough to catch Kingo at the end of a busy day at the SDG Media Zone, a booth which brings together leaders from across the UN's Member States to broadcast discussions on solutions, strategies and news in the push towards the SDGs. While our time with her was short, her enthusiasm and positivity was infectious and certainly left a lasting impression. What follows are the highlights of our brief but insightful conversation.

### **WHAT DO YOU THINK ARE THE MAJOR CHALLENGES TO SIGNATORIES' ADOPTION AND REALISATION OF THE UN'S SUSTAINABLE DEVELOPMENT GOALS?**

We just had the opportunity at the UN General Assembly Week to take stock of the 17 goals after the first four years, and clearly there are two major challenges where the world is far behind in terms of the goals. It's in the climate space and it's on equal opportunities in the

**“I think it’s becoming more and more clear that responsible business is good business”**

—  
**Lise Kingo,**  
CEO and Executive Director,  
UN Global Compact

world, but a common denominator is that we have too slow a pace to reach the goals by 2030. So, as the world’s largest sustainable business organisation, we are now preparing a new initiative that we call the [SDG Ambition](#), which is about helping companies across the world, through our local networks, to set specific targets and to really have an ambition and specific goals. We are hoping that, by giving more focus for companies and setting concrete goals for the targets, we can begin to see the needle move behind each target and reach some of the tipping points that the world so desperately needs, for example, on climate change and on gender equality.

**AS AN INTERNATIONAL GENDER CHAMPION, IN WHAT WAYS HAVE YOU SEEN THE LANDSCAPE CHANGE OVER THE YEARS AND HOW DO YOU USE YOUR POSITION TO DRIVE THAT CHANGE?**

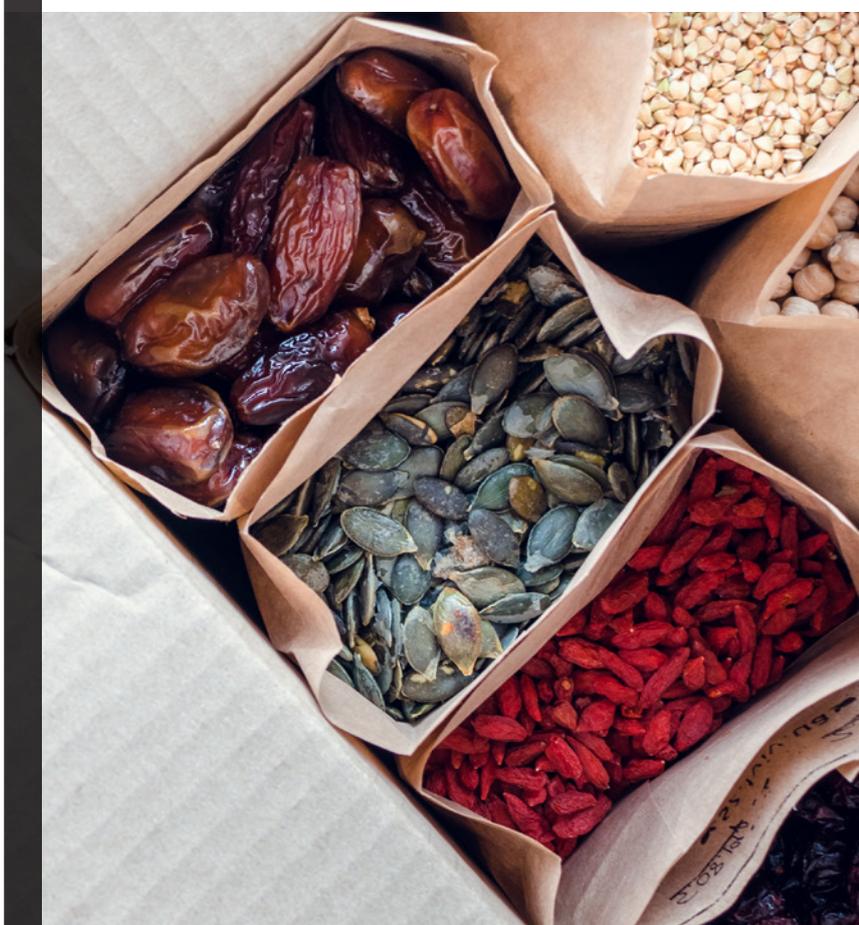
Fortunately, there are good stories out there. One of them is, for example, that the Secretary General has now achieved gender parity on the Board of the UN Global Compact, which he chairs. While we have gender parity now, we have a huge challenge globally when it comes to gender equality. At the moment, it will take more than 200 years to close the gender equality gap and I feel that things have been moving backwards during recent years. So, we have decided the UN Global Compact will launch a new initiative which we’ve called [Target Gender Equality](#). We are going to encourage companies to set very specific targets on gender representation at the executive management level, but also in certain parts of the world to simply better include women in the workforce. We are launching three new gender global impact initiatives: one on setting targets on the global goals, one on setting targets on gender and one on setting 1.5 degree,

### COMPANY FACTS

The United Nations' Sustainable Development Goals are broken down into

17 key areas:

- No Poverty
- Zero Hunger
- Good Health and Well-being
- Quality Education
- Gender Equality
- Clean Water and Sanitation
  - Affordable and Clean Energy
- Decent Work and Economic Growth
- Industry, Innovation, and Infrastructure
  - Reducing Inequality
- Sustainable Cities and Communities
- Responsible Consumption and Production
  - Climate Action
  - Life Below Water
  - Life On Land
- Peace, Justice, and Strong Institutions
- Partnerships for the Goals





science-based targets on climate. We hope in this way we can mobilise all the companies across the Compact by setting more specific goals in these three areas, helping us generate more impact on each of the 17 goals.

### WHAT MANTRA SHOULD ORGANISATIONS ADOPT TO ENABLE REALISATION OF THE SDGS?

I think it's becoming more and more clear that responsible business is good business. I feel, after working in this field for more than 30 years, that this is happening now. The train has left the station. It's

so clear that companies with a responsible business profile have better financial performance, have an easier time in raising funds, have an easier time attracting talent, and have a better reputation. We are even seeing the financial sector really picking up this theme. So, it's happening now and my advice to companies across the world is to join this train and not end up late to the bandwagon, having to adhere to the ambitions that everyone else has set for them. It's more fun to be proactive than to be reactive. ■



# HOW TECH CAN PROMOTE THE 3 RS: RECYCLE, REDUCE AND REUSE

Cutting-edge embeddable technology is poised to revolutionise waste management, but what challenges and benefits can we expect from the next generation of RFID?

WRITTEN BY  
**GILLIAN EWERS,**  
VP MARKETING, PRAGMATIC





**T**he last year or so has seen a massive increase in the number of committees, interest groups, governments, news outlets and more, talking about waste in its many forms. While all of these conversations are vital in driving forward all of us to think about the impact we make on the world, it has led to some green-washing – implementation of changes that on the surface appear to be for the better but, on the whole, aren't. For example, paper straws [that aren't recyclable](#) and biodegradable cups that

require [segregated collection](#) and specific environments to be composted.

Another type of green-washing is where companies focus their outbound environmental marketing on products that have a high recycled value, like PET and glass bottles, for example, whilst ignoring those pesky multilayer packages that are significantly more difficult to handle. And, of course, there are the unspoken areas of excessive packaging and the materials used in wholesale and supply chains. To focus solely on the packaging waste is also not to look



at the complete picture. We need to consider that a lot of packaging covers food, and waste of that resource is estimated at one third of all food produced. This amounts to enough to feed all of the world's hungry [four times over](#).

The World Bank [estimated](#) in 2012 that, on average worldwide, we each generated 1.2kg of waste per day. Only 18% is being recycled, with almost half going to landfill, and the rest is litter. In the developed world, we generate twice as much waste per person.

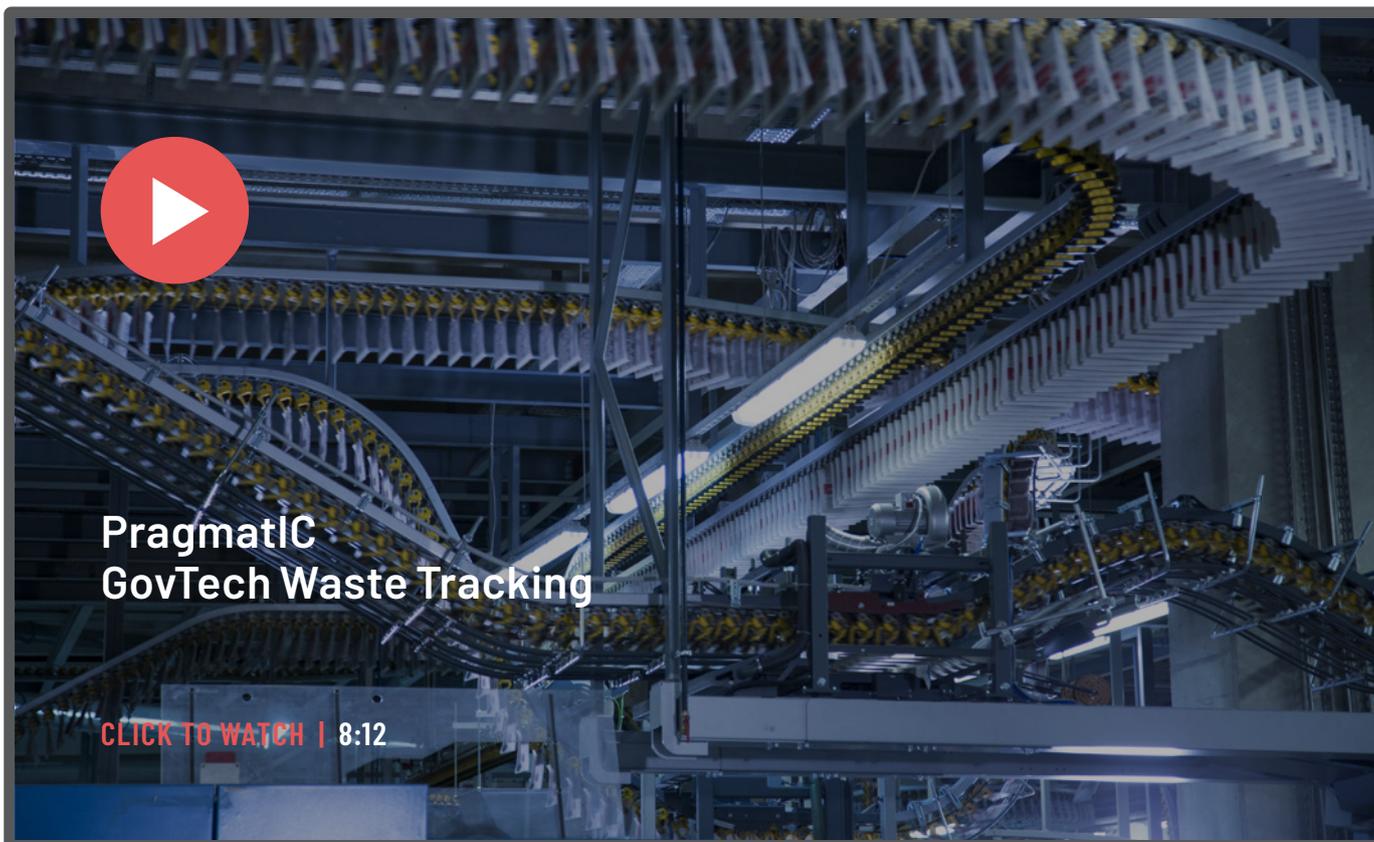
**“YUK waste and recycling advisory body Wrap in 2015 estimated that, of the 7.3mn tonnes of household food thrown away, 4.4mn tonnes was actually edible”**

**“For supply and retail chains, early studies carried out by Avery Dennison have shown up to a 20% reduction in waste at a UK retailer using RFID, by ensuring that short sell-by dates can be easily and quickly identified, and the products brought forward and sold well within those dates”**

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In the case of food waste, the UK waste and recycling advisory body Wrap [in 2015 estimated](#) that, of the 7.3mn tonnes of household food thrown away, 4.4mn tonnes was actually edible. This “avoidable” food waste also generates 19mn tonnes of greenhouse gases over its lifetime, equivalent to almost a quarter of the CO<sub>2</sub> generated by UK cars per year. A second major cause of food waste is losses in the distribution and retail chain. For example, the [Food and Agriculture Organisation](#) estimates that approximately 4% of meat and



9% of fish are lost for reasons including being damaged in transport or thrown away by the retailer when unsold and out of date.

Studies into why we don't recycle more offer some interesting insights, suggesting it's partly down to the availability of the infrastructure in place to enable us to participate, be it at home or out and about, and partly due to a lack of the infrastructure's ability to successfully [sort and handle incoming waste](#), especially after China stopped importing nearly half the world's recyclable waste [last](#)

[year](#). Finally, part of it is because we are all confused about [what can and cannot be recycled](#), as it varies so much from place to place and from time to time.

One area which offers great potential to help reduce waste is RFID/NFC, the technology commonly known for contactless payments from modern cards or smartphones. A low-cost inlay embedded into packaging can be used not only for coupons, loyalty programmes and games, it can also be used to give consumers

information about product usage, food storage directions, cooking instructions and safety. Coupled with sensors, it can be used to track the journey of the product through [the supply chain](#) and, by adding a bespoke machine learning processor, it could also be used to let you know the real state of the food in the package, rather than relying on the (almost) arbitrary use-by [printed date](#). Also, as each item can be uniquely identified and the consumer can be given location-specific information about recycling the packaging waste, improving the chances of recovery rather than landfill.



**“PragmatIC’s flexible integrated circuits (FlexICs) are poised to bring intelligence at a cost point orders of magnitude lower than possible with traditional silicon integrated circuits (ICs), making it feasible to integrate inlays into potentially trillions of consumer products”**



Integrating RFID technology with packaging could also be used to incentivise the consumer at home: a smart recycling bin could count the number of items that are placed into it and give the consumer credits for how much is collected. Promoting positive behaviour rather than the negative “Pay to Throw” schemes which propose to charge for the amount of unsegregated waste. When on the go, deposit return

schemes could be implemented curb-side that could pre-sort the items based on their unique identifier, reducing the risk of cross contamination of plastics.

For supply and retail chains, early studies carried out by Avery Dennison have shown up to a 20% reduction in waste at a UK retailer using RFID, by ensuring that short sell-by dates can be easily and quickly identified, and the products brought forward and sold well within those dates. If this improvement could be achieved across meat, fish and dairy in just Europe and North America, it could save 60,000 tonnes of plastic packaging and 3mn tonnes of food per year.

There is also the possibility that RFID could be used on black plastic food trays, commonly used for ready meals, which cannot be separated using the near infrared (NIR) sorting technique employed in municipal waste recycling centres today. If it could be used to identify this valuable source of plastic, a million tonnes of plastic could be saved from landfill per year in the UK alone.



These are exciting prospects, especially if scaled to multiple countries and packaging types – but will it come into fruition? The deployment of RFID/NFC technology has so far been restricted to brand engagement low volume marketing campaigns, due to the cost of the solutions. But now PragmatIC's flexible integrated circuits (FlexICs) are poised to bring intelligence at a cost point orders of magnitude lower than possible with

traditional silicon integrated circuits (ICs), making it feasible to integrate inlays into potentially trillions of consumer products.

Before we leave this topic, we need to review whether RFID/NFC makes packaging more difficult to recycle. The technology is added to packages via inlays – small additional labels that are usually placed under the graphic label we are all used to seeing - or attached to the box/



packages, [Smurfit Stone demonstrated](#) that the inlays and labels could also be easily separated in the pulping process. The small amount of remaining substrate aluminium can be used in a similar way to the [polyal waste from aseptic packaging](#).

In summary, the reducing cost of implementing RFID/NFC on everyday goods offers a great opportunity. As well as delivering clear, localised information about the recyclability of the packaging, it can be used to incentivise consumers to recycle more and reduce food waste both in the retail chain and at home. It could make serious inroads into achieving the EU's challenging goals to reduce landfill to a maximum of 10% of municipal waste by 2030 and play a significant part in the war against waste. ■

bottle. Advances in adhesive technologies by the big label manufacturers, for example, [from Avery Dennison](#) and [UPM Raflatac](#), have resulted in labels (and inlays) that cleanly float off during the recycling process so they can be separated from the valuable plastic bottles. If the glass is going through a crushing process, then the labels and inlays are burnt off when the glass cullet is melted. For cardboard







# Driving sustainability and waste reduction in fast fashion

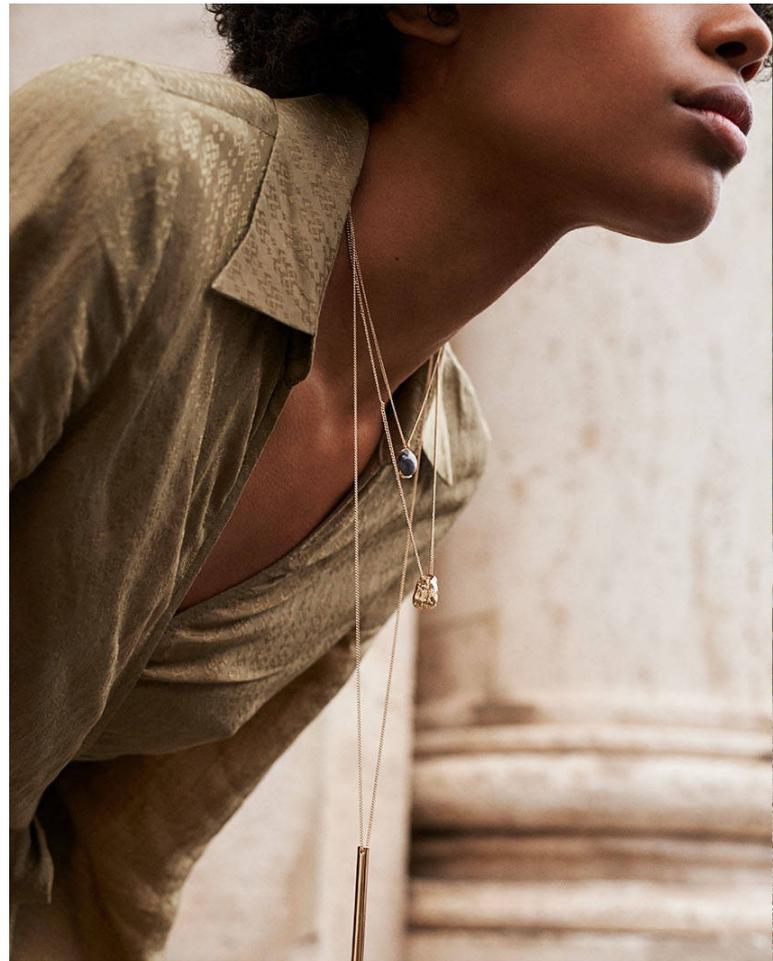
As consumer attitudes shift away from the traditional fast fashion model, we take a look at the figures behind the alarm and how one of the industry's leaders is fighting to make it right

WRITTEN BY  
MARCUS LAWRENCE



**C**lothing manufacturers and retailers have become a central pillar of interest for the environmentally and ethically conscious consumer. 'Fast fashion' - clothing rapidly mass produced to ensure retailers are stocked with the latest trends - bears the brunt of shifting attitudes to clothing consumerism and its negative impact on the environment. There is also greater awareness, thanks in part to groups like Good on You, of the treatment of workers along the supply chain, the nature of the materials they use, and the air miles that any given garment racks up on its convoluted journey from the catwalk to your back.

As it stands, this shift in attitudes has yet to be realised when it comes to clothing and textiles waste. A study, conducted by Danish-Dutch textiler LabFresh, assessed Europe's biggest contributors to textile waste, helpfully captures the scale of the issue. Italy, the top textile polluter, sends 4.4kg of textile waste to landfill per person, with an average annual spend of £920.80 on new clothes. Of the 7.7kg each Italian



consumer discards over a year, a mere 0.6kg is recycled. Interestingly, even among countries with significantly smaller appetites for new clothing, every country featuring in the top 15 is guilty of recycling only around 10% of their total textiles waste. Consumer awareness and recycling infrastructure pose widespread and costly challenges when it comes to taking a bite out of this 90% deficit but, while that battle is fought over the long-term, the most impactful changes can be driven in the short-term by the industry itself.



**“As it stands, this shift in attitudes has yet to be realised when it comes to clothing and textiles waste”**



Thankfully, the zeitgeist is inspiring changes to modern business. Cynicism around the viability of investing in sustainability initiatives (particularly against the proven revenue generation of legacy methodologies) is increasingly quashed by the knowledge that unsustainable companies will lose out to those who are willing to listen to the growing consensus. Inspired in recent years by the likes of David Attenborough and Greta Thunberg, conscious consumers hold more power than ever; the hope is that they will use their wallets to drive

society towards a greener future. The task of establishing ethical and sustainable operations to appeal to such consumers is compounded by the need to make such operations visible to them: there is no room for modesty when it comes to convincing the conscious consumer that you offer the most sustainable option.

While many retailers and textilers the world over are working to both address these challenges and capitalise on the fiscal opportunities they present, Swedish clothing giant H&M is, perhaps, the definitive example of

**“Inspired in recent years by the likes of David Attenborough and Greta Thunberg, conscious consumers hold more power than ever”**

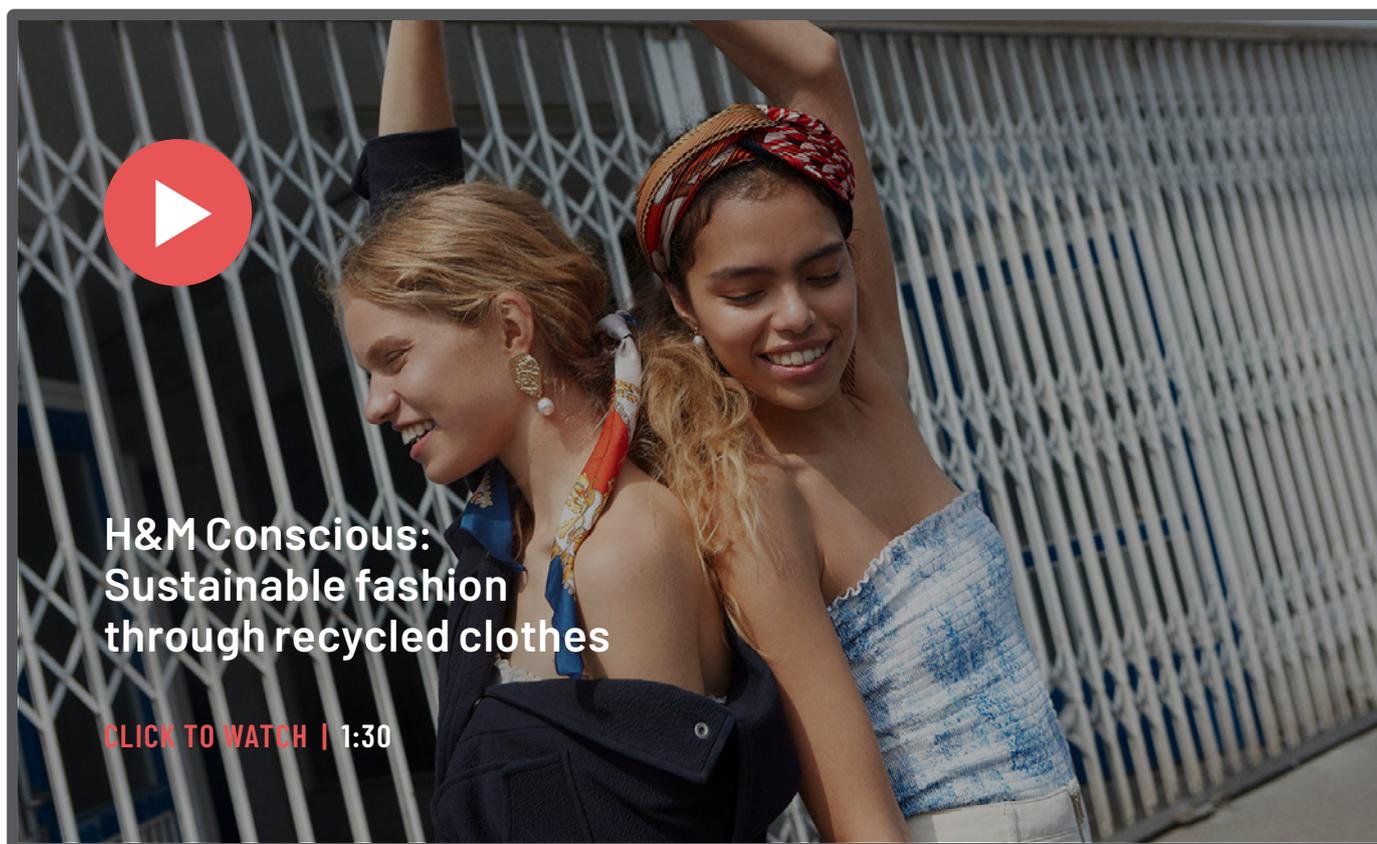


50



sustainable fashion becoming mainstream. Sweden itself is regarded as an international sustainability champion (naturally, it doesn't feature in LabFresh's top 15), and H&M's green approach to its operations reflects this laudable cultural quality. While its sustainability-focused endeavours date back 20 years, the times have come to highlight its successes and bold approach like never before.

The importance of sustainability to H&M's operations is evident from even the most cursory glance at its website with, alongside the traditional commercial elements of online fashion retailing, a dedicated heading that explains its ethos, values and commitments to the cause. Looking fractionally closer reveals an even deeper story: a platform that strives to provide consumers with as much visibility as possible for the clothes they're considering. Greenwashing - the act of making operations seem sustainable, or to make it appear as though a concerted effort is being made to make them so - may have become more widespread but, for H&M, there is a demonstrably clear



reality to the work it espouses. Evidence of this comes with the site's pioneering transparency later which offers unparalleled detail for each garment's origins. By clicking the 'Product Sustainability' tab on each article's page, customers can view its materials, how those materials are fashioned, the suppliers of those materials, and details of the factories where they were produced. This is enabled by H&M's commitment to sourcing from independent suppliers, narrowing the supply chain down and easing transparency. We had the

pleasure of speaking with Anna Gedda, Head of Sustainability for the Group, at Web Summit 2019, and she views this as essential to the company's strategy for delivering profitable, sustainable operations.

"Transparency is an area that we see is growing quite tremendously, and the need for transparency is really for building customers' trust in what they're buying," she says. "We make it easier for them to know the quality and background of the products, and to be able to compare them. We launched our transparency layer on

our H&M brand and H&M home brand this year [2019], but we actually had worked with this previously with Arket, one of our smaller brands. The big difference there is that, with Arket, that was very much a manual process. What we have done with the H&M brand is to have this as an automated process based on internal systems. Connecting all the data points we have about the products, where they are made, who has made them, into one layer that can be communicated in a transparent and easy way.” Gedda adds that the firm is keen to continue exploring this strategy, and is committed to continually finding new ways to add value to its product transparency.

Informing customers of product composition and sourcing is just one way H&M’s strategies have solidified environmental and ethical values throughout its operations, and Gedda was keen to discuss the customer-facing initiatives that emblematised its approach. “Sustainability, for us, encompasses everything from the environmental work all the way to the social work,” she says, highlighting the cohesive and group-wide influence



**“We are, of course, super happy to see that more customers are engaged around sustainability, but it hasn’t really changed where we’re going. What’s important for us is to see how we can make it easier for customers to lead more sustainable lives”**

—  
**Anna Gedda,**  
Head of Sustainability,  
H&M Group



make it easier for customers to lead more sustainable lives.”

One such initiative is its Take Care programme which directs customers to ways they can extend the lifespan of their clothes. At the time of writing, the programme has delivered 79 articles covering everything from repairing habitually stuck zippers and removing make-up stains to turning unwanted clothes into unique reappropriations of their former selves. For garments deemed irretrievable by their owners, H&M has stepped up to bridge the gap between desire and infrastructure. “We also have garment collecting, where you can hand in an unwanted garment and it’s given a new life,” says Gedda. “That really takes care of one of the big problems, which is that otherwise unwanted garments would end up in landfills.” Naturally, such initiatives require the opt-in of consumers, but H&M throws the door open to people who may otherwise not know any better by providing such services.

Both initiatives tap into solving an issue caused by the relative disposability of fast fashion garments, an

of her team. “My team and I oversee the full direction of where the group is going, and we have all the group’s functions and brands set goals and action plans to make sure that we get where we want to go.” That direction, she adds, has not been altered so much as bolstered by the changing views of the consumer. “We are, of course, super happy to see that more customers are engaged around sustainability, but it hasn’t really changed where we’re going. What’s important for us is to see how we can



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inherent sap on their longevity. Fashion is often a financially exclusionary industry, and upping the cost of such garments to elevate their quality and lifespan will close yet more doors to consumers' ability to engage with trends; H&M's Take Care and garment collection initiatives work to address the issue without limiting consumer choice. In addition, Gedda says the firm is aiming to develop a circular economy for

its garments, ultimately eradicating its waste footprint.

In December 2019, the firm opened its first rental store in Stockholm where members of its customer loyalty scheme can book appointments with stylists, rent three items per week, and return them to the same store when they're done. An affordable rental service caters to those who regularly refresh their look without elevating the volume of waste they



produce; en masse, this initiative could significantly cut the volumes reaching landfill. The service bears resemblance to that offered by UK-based rental pioneers Hurr Collective and Our Closet, and it is exciting to consider what H&M, one of the industry's biggest players, can achieve with its own offering. "This very much connects with our vision to become a 100% circular business," enthuses Gedda. "For us, that means

the whole lifespan of a product, whether there's something that we sell or something that is just part of the products that we sell, like packaging for example. So that has to do with the design, the material, how it's being used and ultimately how it's being put back into the system."

On H&M's packaging strategy, Gedda adds: "when it comes to packaging, we follow the same structure there, so we have set some ambitious goals in terms of circular design for our packaging to be either designed for being recycled, to be reused or to be compostable by 2025."

The road to sustainable, affordable fashion is long and complex, and it will require the buy-in of the industry at large to truly swing the tide of LabFresh's findings. With H&M leading the way as one of the world's foremost clothing titans, there is at the very least cause for optimism, particularly as consumers indicate with their wallets that the appetite for sustainably produced clothing is the new norm. ■

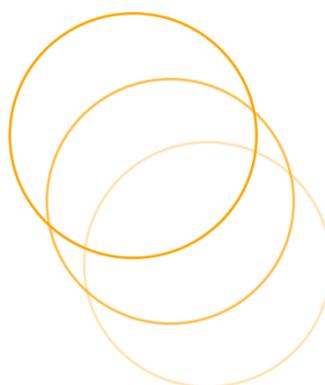






**avantium**

# The quest for the fossil-free future of plastic



Tom van Aken, CEO of Avantium, discusses the challenges and benefits of introducing plant-based plastics to the drinks industry

WRITTEN BY **WILL GIRLING**

57

**F**ounded in 2000 and headquartered in Amsterdam, Avantium is an innovative chemtech company dedicated to supplanting the dominant presence of fossil fuels in chemicals and materials with renewable, plant-based alternatives. Joining the company in 2002 after previously working in the chemical industry at Dutch multinational DSM, Tom van Aken became the CEO in 2005 and has been working on making plant-based plastics viable ever since.

Recognising that global trends were starting to shift towards increased sustainability across all aspects of business, Avantium saw the ecological potential that weaning industries off of petroleum-based plastics could achieve. However, there was some initial scepticism that such a move was worth making. “People previously thought that the best plastics could only be made from petroleum and that, if you made something from plants, then it’s probably inferior,” says van Aken. “I think it’s the other way around: PEF is the superior packaging material compared to conventional plastics.”

PEF, or Polyethylene Furanoate, is a 100% bio-based polymer and could represent a revolution in drinks packaging. Starting from fructose derived from sources such as corn, sugar cane or sugar beet, the syrup undergoes a chemical catalytic process to produce a





**“I THINK [...] PEF IS THE SUPERIOR PACKAGING MATERIAL COMPARED TO CONVENTIONAL PLASTICS”**

—  
**Tom van Aken,**  
CEO of Avantium



product called FDCA (furandicarboxylic acid), the building blocks of PEF. “It has high gas barrier properties, so it’s very good at withstanding CO<sub>2</sub>,” claims van Aken. “If you take a carbonated soft drink, such as Coca Cola, PEF packaging would be able to keep the CO<sub>2</sub> in the bottle up to 60 times longer. That means your shelf life goes up and you can make thinner and lighter bottles.” PEF also has the potential to increase the shelf life of a product, as its surface provides an

effective oxygen barrier that prevents beer, fruit juice, etc, from spoiling. To top it all off, PEF is completely recyclable and biodegradable. “It really is the next generation material that people have been looking for,” van Aken says.

The development of viable bioplastics is the prize for years of research aimed at reducing the environmental damage of fossil fuels in the packaging industry. Although petroleum-based products haven’t gone away, the recent global shift towards eco-conscious business practices has changed the nature of the conversation: informed customers are now expecting the market to reflect ‘green’ attitudes. “Fossil fuels and their impact on climate change have become a very dominant factor, but the other factor is plastic waste in natural systems,” says van Aken. Avantium’s stance has been to ensure that the technology it develops addresses these two key issues. “The solutions that we’re looking for are focused on materials that can be recycled or biodegraded. Our materials will degrade via bacteria, avoiding

the possibility of masses of plastic that will stay on Earth for hundreds of years.”

Consumer demand for alternative packaging has generated great interest among big players within the drinks industry. At this point, the obstacle to overcome is gaining visibility and awareness of PEF in the market. “We are, in this sense, just a small company in the global economy. The only way to get our new technologies to the market is by forming close partnerships with other companies.”

**“IT REALLY IS THE NEXT  
GENERATION MATERIAL  
THAT PEOPLE HAVE  
BEEN LOOKING FOR”**

—  
**Tom van Aken,**  
CEO of Avantium



Avantium has shown the scope of its own ambition to push PEF into the limelight by teaming up with industry leaders such as Coca Cola, IKEA and Carlsberg. For the latter, Avantium has developed a bottle with an exterior made of paper but an interior lined with PEF, creating a light and biodegradable container that functions just as well as conventional materials like glass or aluminium. “They see the need, particularly with young consumers who expect these brands to come up with sustainable solutions, to find technologies that will allow them to

**“I FIRMLY BELIEVE THAT THE MARKET IS WAITING FOR THIS TYPE OF RENEWABLE AND CIRCULAR SOLUTION”**

—  
**Tom van Aken,**  
CEO of Avantium

make the transition,” says van Aken. This is where companies like Avantium come into play.

62 However, as with all products that are new, there are some who remain skeptical about PEF’s viability. Not yet produced on the scale of conventional plastics, bioplastic will likely require years of optimisation, research and development to reach its full potential. Directing the applications of PEF to higher value prospects in the short-term may help redress the issue - gaining exposure for the technology and using the developmental opportunities to help lower costs. It might not necessarily be the fastest road to success, but van Aken is confident that customer demand will keep the industry buoyant: “I firmly believe that





#### COMPANY FACTS

PEF keeps CO<sub>2</sub>  
in the bottle up to 60  
times longer

the market is waiting for this type of renewable and circular solution.”

The exciting thing about PEF’s evolution is the variety of its applications as a replacement for conventional plastics. Aside from use in the drinks industry, van Aken describes the drive for bio-plastic replacements for the plastic film commonly found in supermarkets as a cover for meat and fish. “We’re now looking to see if we can come up with PEF packaging solutions that can be recycled whilst also providing the type of protection that these retailers are looking for.” As with drink packaging, since consumers are demanding an alternative, van Aken is confident that the market will be able to respond. “So far, people have called [bioplastics] the sleeping giant: a giant because it has huge market potential, but sleeping because no one has been able to make it work economically.” A growing global appetite for sustainable, eco-friendly solutions from consumers could be the thing which finally wakes this particular giant up. ■







**TOP  
10** ▶

# **LNG companies by market capitalisation**

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CSO Magazine takes a look at the biggest players in the LNG market and their work pertaining to the bridge fuel

WRITTEN BY **WILL GIRLING**

**CEO**

CLAUDIO DESCALZI

**30,950**NUMBER  
OF EMPLOYEES**HQ**

ROME, ITALY

**10****Eni**

\$57.4BN



Eni has a global LNG portfolio based on long-term purchasing contracts, which include liquefaction and regasification facilities. Committed to developing international projects, while also maintaining its attention in Europe, the company sold the first LNG produced from its Jangkrik, Indonesia project in 2017. Prior to this, in 2016, Eni teamed up with BP to sell the LNG produced by the Coral South project in Mozambique over the next 20 years, with an approximate annual yield of 3.3mn tonnes per year.



# CEO

ELDAR SÆTRE

# 20,245

NUMBER  
OF EMPLOYEES

# HQ

STAVANGER, NORWAY



67

# 09

## Equinor

\$67.77BN



Recognising the potential in a growing market, Equinor now sells LNG to over 20 countries worldwide.

Sourcing its product primarily from the Snøhvit field in the Barents Sea, Equinor has four LNG tankers and terminals in Hammerfest and Bilbao. Aiming to reduce CO2 emissions to almost zero by 2030 across its offshore and onshore operations, Equinor is taking a firm stance on sustainability. “Global energy markets are changing,” said Executive VP Irene Rummelhoff. “The world needs more energy, but lower emissions. Natural gas is well positioned to provide secure, competitive and sustainable energy to consumers and industry”.

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**CEO**

RYAN LANCE

**10,800**

NUMBER  
OF EMPLOYEES

**HQ**

HOUSTON, TEXAS

**08**

## ConocoPhillips

\$69.86BN



Not only an active advocate for LNG but also an innovator in its production, ConocoPhillips developed the widely adopted 'Optimized Cascade' process in 1969.

First utilised by Kenai LNG plant in Alaska, this technology makes use of proprietary technology to liquefy gas and filter/remove waste products. Having received industry recognition, this process is now licensed to 25 LNG trains. ConocoPhillips' current LNG projects include Australia Pacific LNG, Darwin LNG and Qatargas 3 in Qatar, which started operations in 2010 and has a projected lifespan of 25 years.

**CEO**

ALEXEY MILLER

**466,100**NUMBER  
OF EMPLOYEES**HQ**

MOSCOW, RUSSIA

**07**

## Gazprom Group

**\$80.56BN**

Seeking to expand its presence in what it considers to be “promising gas markets”, Gazprom is giving LNG development high priority. Having recorded LNG sales of 3.88mn tonnes in 2018, Gazprom is now seeking to add itself to the list of big industry players for LNG. Stating its belief that shale gas production will be less lucrative in future markets, the company (and Russia) is expected to become a leader for LNG by the year 2030. With the first delivery of Russian LNG to Mongolia in November 2019, Gazprom is already leading the way in its domestic market.

# CEO

BERNARD LOONEY

# 73,000

NUMBER  
OF EMPLOYEES

# HQ

LONDON, UK



# 06

## BP

\$131.42BN



BP's focus is to bring its own brand of innovative commercial solutions to the LNG market, making use of an extensive supply and shipping portfolio.

A main shareholder and partner of Shah Deniz, one of the largest gas-condensate fields in the world located in Azerbaijan, BP produces 25bn cubic meters of gas per year for the European market. Further developments are occurring in Asia and Africa: the company owns almost a third of the Guangdong Dapeng LNG Terminal in China and BP has teamed up with Kosmos Energy in Senegal and Mauritania to comprehensively develop LNG projects in the region.

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**CEO**

PATRICK POUYANNÉ

**102,168**

NUMBER  
OF EMPLOYEES

**HQ**

PARIS, FRANCE



73

**05**

**Total**

**\$135.9BN**



Having operated within LNG for 40 years, Total prides itself on being one of the few companies in the sector to “integrate operations across the entire gas value chain, from production and liquefaction to marketing and distribution to end-customers”.

Total holds global interests in LNG that are predicted to contribute almost 40mn metric tonnes to the world market by 2020. Not only that, it also channels funds into the development of marine transportation for the gas in its liquid form. Current projects include Yamal LNG and Ichthys, based on the Australian coast.

**CEO**

WANG YILIN

**1,382,401**NUMBER  
OF EMPLOYEES**HQ**

BEIJING, CHINA

**04****CNPC****\$161.09BN**

Keen to diversify the company's portfolio, CNPC (China National Petroleum Corporation) has expanded to three LNG terminals in the Hebei, Jiangsu and Dalian provinces.

In a noticeable improvement to its production capability, the company was able to offload 15.13mn tonnes of LNG at its three terminals in 2018, a 45% rise from 2017's figure. Current projects for the company include Tangshan LNG, which features a dock, trestle and terminals. The overall storage capacity will be 640,000 cubic meters, with an annual terminal capacity of 10mn tonnes.



**CEO**

BEN VAN BEURDEN

**86,000**

NUMBER  
OF EMPLOYEES

**HQ**

THE HAGUE,  
NETHERLANDS



**03**

## Royal Dutch Shell

\$229.46BN



A pioneer in the LNG market, Shell has been involved in the global project to utilise it for over 50 years.

The world's first LNG plant, located in Algeria, was assisted in its 1964 delivery by Shell, which also shipped the resulting product to the UK for sale. Shell is, in many respects, at the forefront of the LNG trade. The company's current supply projects are now present in 10 countries across the globe, including the Brunei LNG plant, Oman LNG and Nigeria LNG.

**CEO**

MIKE WIRTH

**51,900**NUMBER  
OF EMPLOYEES**HQ**SAN RAMON,  
CALIFORNIA

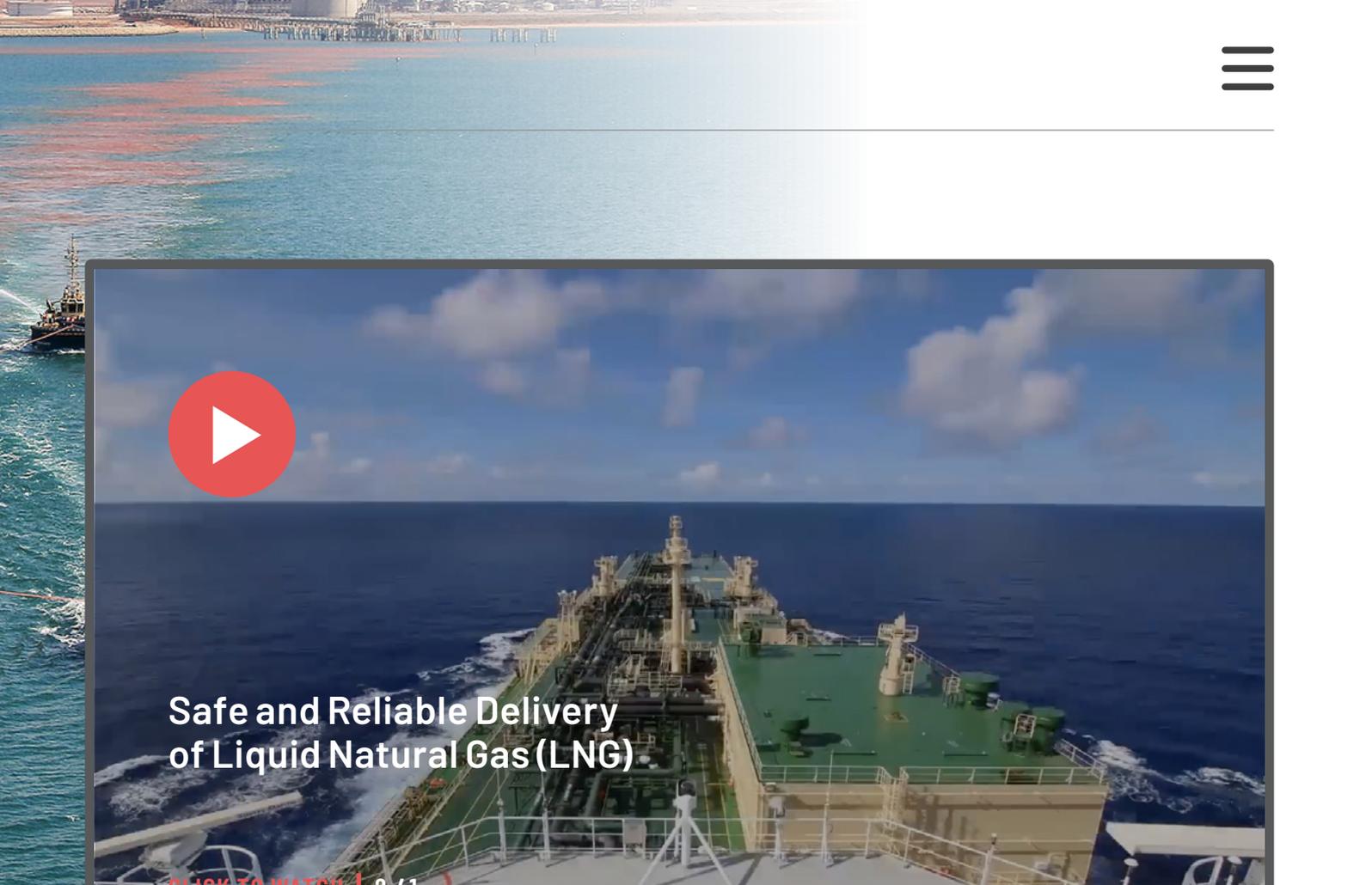
# 02 Chevron

\$235.63BN

Chevron CEO John Watson stated at the 18th International Conference & Exhibition on LNG that, “Experts project global LNG demand will increase nearly 130 percent by 2035”.

To help meet this figure, Chevron’s ‘Angola Liquefied Natural Gas Project’ is one of the most impressive energy projects operating in Africa today. With a processing capability of 1.1bn cubic feet of gas per day, Chevron’s ALNG venture is making a substantial dent in the rising demand for LNG, producing an average of 23,000 barrels of LNG per day in 2018.





## Safe and Reliable Delivery of Liquid Natural Gas (LNG)

CLICK TO WATCH | 2:41



**CEO**

DARREN WOODS

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**71,000**

NUMBER  
OF EMPLOYEES

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**HQ**

IRVING, TEXAS

A large, illuminated sign for ExxonMobil, with the word 'Exxon' in red and 'Mobil' in white, set against a dark background. The sign is mounted on a building and is brightly lit, making it stand out against the twilight sky.

**ExxonMobil**

**The promise of  
natural gas is now**

**CLICK TO WATCH | 1:04**



# 01 ExxonMobil

\$311.96BN

With a clear understanding of the important role LNG will play in shaping future fuel supplies, ExxonMobil possesses over 40 years' experience in the sector.

Signifying its status as a world leader, ExxonMobil is growing its portfolio of LNG operations to meet the growing global demand. These projects include one in Papua New Guinea, which had a recorded production volume of 9mn tonnes in 2018, and Mozambique. The latter development, called 'Area 4', is estimated to hold 85trn cubic feet of gas. It represents an exciting and profitable venture for a company with its sights set firmly on the future.





CSO Magazine runs down some of the biggest upcoming energy and sustainability events from around the world



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## The Responsible Business Summit New York 2020

[ NEW YORK, USA ]

Inspired to action by the rising issues caused by climate change, social inequality and a consumer-driven pressure for businesses to react, the Responsible Business Summit hopes to address global concerns. Focusing on fostering collaboration between industries, developing new business models and forms of investment, the event will see 650+ CEOs, CSOs, ESG investors and leading NGOs from all over the world come together and share their vision for transforming sustainability. Billing itself as the only gathering of its kind to feature so many experienced world-class speakers, the Summit in New York is promised to be two days of candid debate on the topic and how it can best be remedied.



24-25 MAR 2020

## Future of Utilities Summit 2020

[ LONDON, UK ]

This annual meeting of executives from UK leaders in energy and water comes highly recommended by E.ON UK's CEO, Michael Lewis. Across its busy two-day agenda, the event offers insights from some of the industry's most innovative minds on topics including tech's role to play in enhanced customer service, the business challenges and benefits of decentralisation, positioning the UK as an innovation leader in the space, the electricity network of the future, and much more. Speakers at the 2020 event include, among others: Mike Potter, CTO at Thames Water; Basil Scarsella, CEO at UK Power Networks; Johanna Dow, Chief Executive at Business Stream; Heidi Mottram, CEO at Northumbrian Water; and Rebecca Heaton, Head of Sustainability and Policy at Drax Power.



EDITED BY **MARCUS LAWRENCE**



## 26-27 MAR 2020 2nd ASEAN Wind Energy 2020

[ HO CHI MINH CITY, VIETNAM ]

Hoping to anticipate the changes in APAC's rapidly expanding wind energy sector - particularly Vietnam, Philippines, Thailand and Indonesia - the second ASEAN Wind Energy event aims to encourage collaboration, investment and innovation across the industry. Hosting more than 80 world-class speakers, over 50 exhibits and 1,500 participants for a full day of structured networking. Believing that Vietnam possesses abundant natural resources to make renewable energy viable, as well as years of cumulative experience in the energy sector generally, the organisers also hope that the event will showcase the country's achievements and establish its position as a sustainable energy nexus.



## 26 MAR 2020 The Sustainability Summit 2020

[ LONDON, UK ]

Hosted by The Economist, the Sustainability Summit 2020 will be focused primarily on the need for governments and institutions around the globe to significantly upscale efforts to decarbonise industries and drastically cut emissions to keep global warming below 1.5°C. The day-long event will cover the impacts of sustainability goals on economic growth, the current progress toward the UN's Sustainable Development Goals, the impacts of environmental issues on mental health, and prospective policies that could help turn the tide against carbon emissions and climate change.





**13-14 APR 2020**  
**The Solar Show //**  
**The Wind Show**  
**[ CAIRO, EGYPT ]**

The 2020 MENA Solar and Wind Shows are government-affiliated, free-to-attend events offering content from over 150 speakers from the region's renewables industry across two days. Speakers at the events include: Sherif Issa, Head of Environmental Sustainability at Orange; Sonia Mezzour, Vice Chair of the Bureau of PPP Working Party at the UN Economic Commission for Europe; Harry Boyd-Carpenter, Director of Power and Energy Utilities for the European Bank for Reconstruction and Development; Amani Al Azzam, Secretary General for Jordan's Ministry of Energy and Mineral Resources; along with many more.



**28-30 APR 2020**  
**Electric and Hybrid Vehicle Technology Expo**  
**[ STUTTART, GERMANY ]**

The Electric and Hybrid Vehicle Technology Expo (EHVTE) in Stuttgart will offer attendees the chance to hear from and speak with over 450 manufacturers and service providers from across the hybrid, electric vehicle (EV) and battery supply chains. Offering the chance to glean insights from industry leaders on the latest innovations and solutions, EHVTE promises to be one of the best destinations for industry players in 2020.





**13-14 MAY 2020**  
**All- Energy Exhibition  
Conference 2020**

[ **GLASGOW, UK** ]

Glasgow's All-Energy Exhibition and Conference strives to enable the UK renewable low carbon energy community "to interact, conduct business, network and learn, whether face-to-face or online", according to the organisers. Held annually in Scotland, the event brings together a total audience of around 7,000 and promises to be a must-attend conference for any energy professional.



**18-20 MAY 2020**  
**Cleantech Forum  
Europe**

[ **LUXEMBOURG, LUXEMBOURG** ]

The 16th annual Cleantech Forum Europe, set over three days, brings together the biggest players in the clean technology space, along with government representatives and investors, for discussion, networking and opportunities to strike new partnerships. Keep an eye out for updates on speakers and the event's programme in the coming months.





ADITYA BIRLA GROUP

# Textiles lead the way

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MARCH 2020



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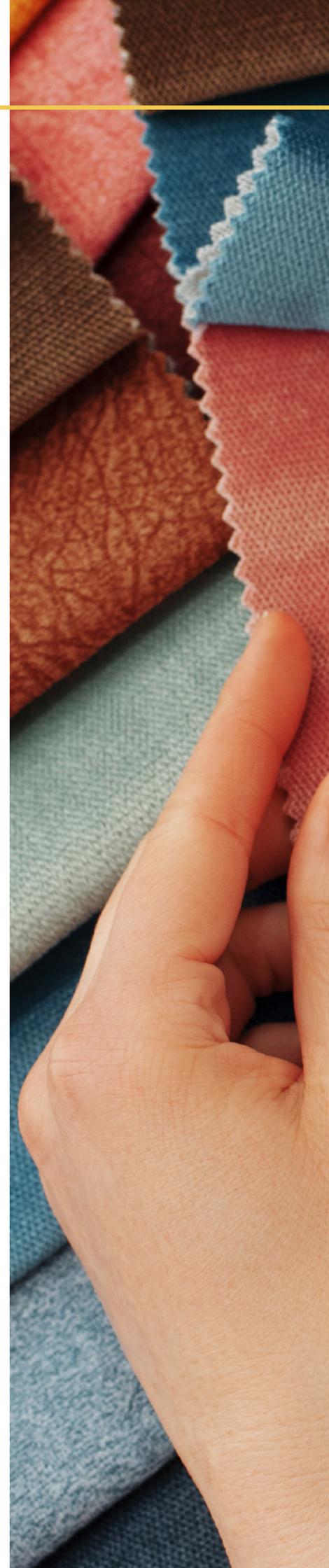
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## How Aditya Birla's textile business got it off the ground and continues to power growth

**I**ndian multinational conglomerate Aditya Birla group has its fingers in many different pies. Founded in 1857, it predates even the British Raj, instead dating from the end of the British East India Company's control over the subcontinent. As befits such an antique company, its labyrinthine structure incorporates interests in a wide range of industrial products including viscose staple fibre, palm oil, carbon black (a byproduct of petroleum combustion often used as a pigment), viscose filament yarn, cement and rayon grade pulp.

Aditya Birla's current success, however, really stems from the work of Aditya Vikram Birla, a scion of the family. Taking on his father's business group, Birla oversaw the expansion of the company outside of India to locations including Thailand, Malaysia, Indonesia, the Philippines and Egypt - a strategy which paid off considering that over 50% of the group's revenues are derived from overseas businesses, now spread across 36 countries in North and South America, Africa and Asia. He is quoted on the group's website as



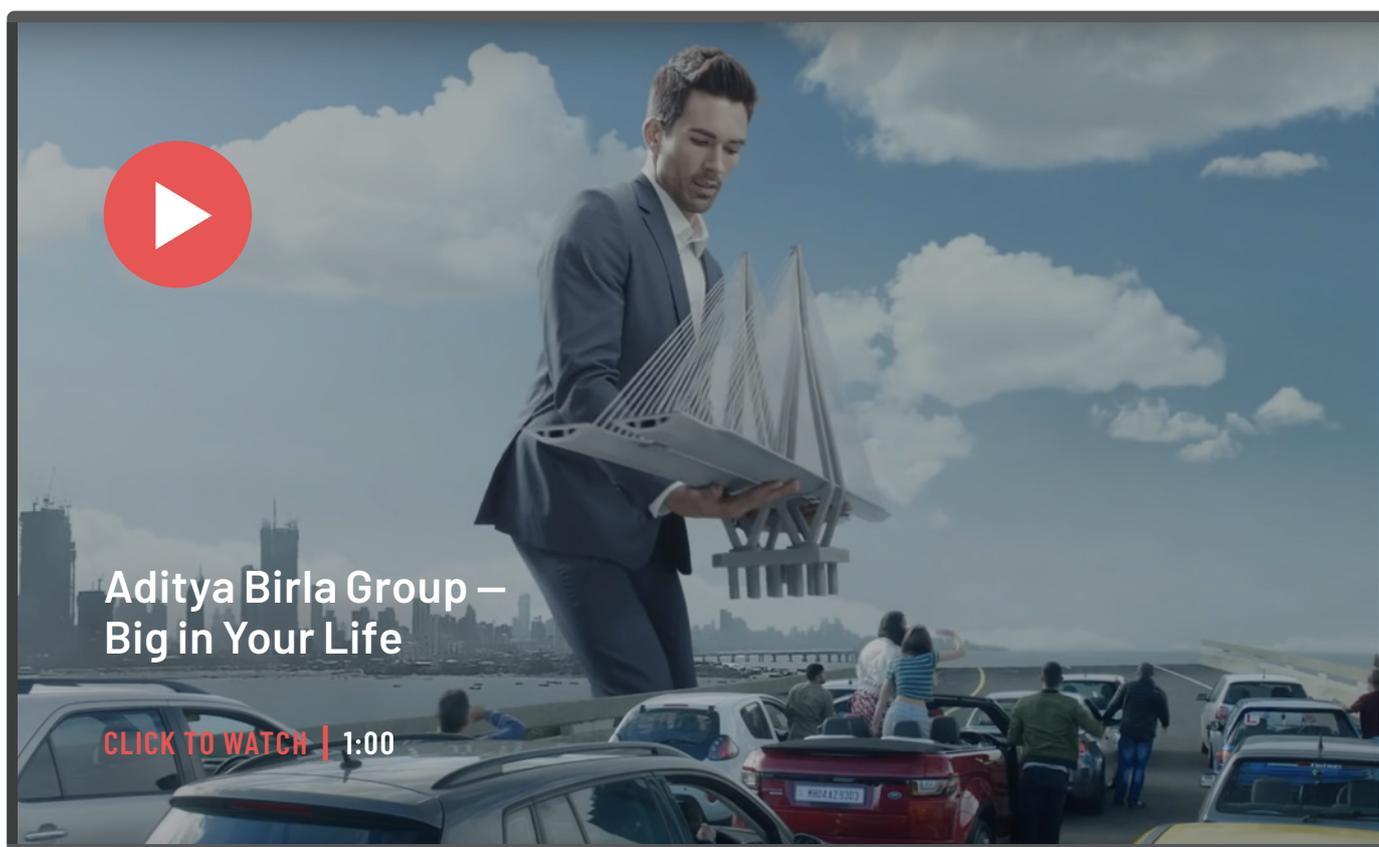


**“Our energy derives from the sun, termed Aditya in our mythology, and so closely linked with the name of our legendary leader, Aditya Vikram Birla”**

saying: “My vocation is to strive continuously, to reach excellence in all spheres of management, by weaving the threads of enterprise, knowledge, experience, ideas and tasks into a fabric that can be called ‘management’.” By the time of his death in 1995, the Group’s revenues had crossed INR80bn globally, and consisted of 55 plants, 75,000 employees and 600,000 shareholders.

As a “\$48.3bn corporation”, Aditya Birla employs over 120,000 employees spread across 42 nationalities. It





calls itself the global leader in aluminium rolling, viscose staple fibre and carbon black, and the Indian leader in branded fashion, grey and white cement and concrete. The company's Chairman, Kumar Mangalam Birla (the son of Aditya Birla, the man), has said of his approach: "Great businesses are never built on the quicksands of opportunism. I reiterate that, if living by our values means, perhaps growing at a pace slower than we would otherwise have liked, so be it. For us, leadership lies at the heart of knowing what we stand for."

# WINNING TOGETHER



We commit to your business before we commit to ours

We, Asia Pacific Fibers, are a leading integrated global polyester player. Being at the forefront of the polyester industry, we are propelled by vertical integration, professional management, state-of-the-art machinery and consistent quality in manufacturing.

As a leading manufacturer and marketer of polyester chips, staple fibers, filament yarns and fleece fabrics along with captive PTA [purified terephthalic acid], we are able to cater to the ever-changing demands in apparel, furnishings and industrial textiles.

Because of the joint commitment of all our customers, partners, employees and various stakeholders towards exploiting new opportunities, we have evolved into Indonesia's most progressive, flexible and fully integrated polyester producer ranking amongst some of the best in the world. Yet ... our journey of collaborative innovation is just accelerating.

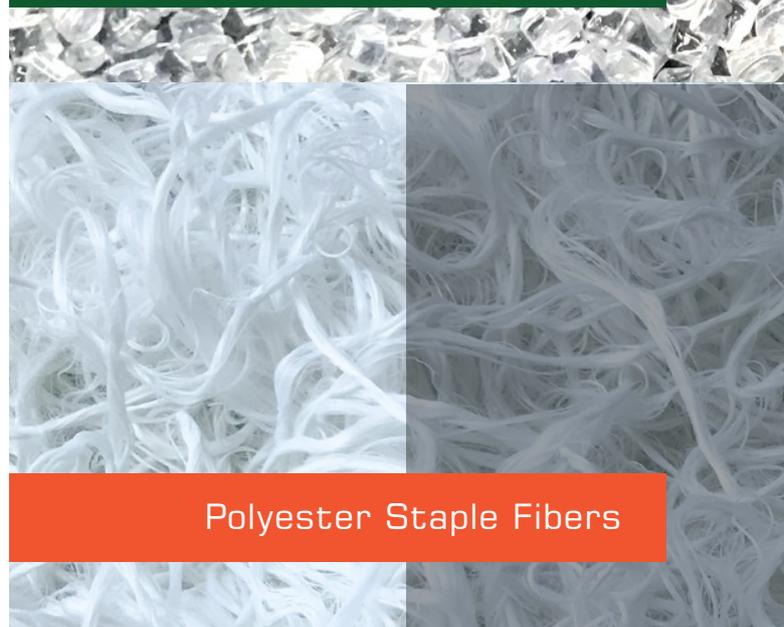
We invite you to delve into more details about us, our promise, our brands, our services etc. and join us in this journey.

**LEARN MORE**

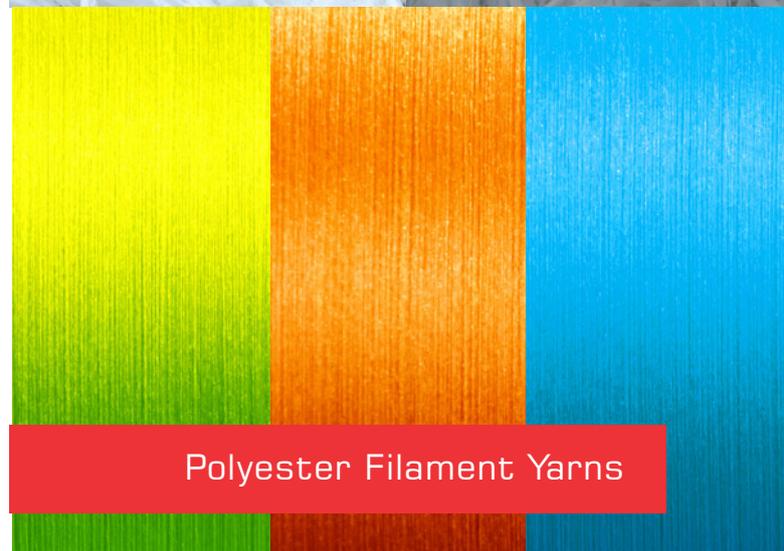
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Polyester chips



Polyester Staple Fibers



Polyester Filament Yarns

Asia Pacific Fibers (APF) is an integrated polyester manufacturer, active from petrochemicals to polyester yarn and propelled by vertical integration, professional management, state-of-the-art machinery and consistent quality in manufacturing. We produce polyester chips, staple fibers, filament yarns and fleece fabrics along with purified terephthalic acid (PTA).

Polyester completely dominates the global fiber mix, growing at 5.5% against the growth of 1.3% for all other fibers. Polyester filament consumption is projected to grow 11-fold between 1990-2025, with polyester staple fiber growing by 3.2 times. Polyester growth is driven by advanced applications in the industrial and home textile space, and by its affordability, durability, and an amazing diversity of applications. Polyester is applicable not only in the apparel industry, but in hosiery, automotive, sportswear, household and various technical textiles. This tremendous growth is because of the many beneficial characteristics of polyester, including being recyclable, easy-care, stable and clean, as well as easily modifiable.

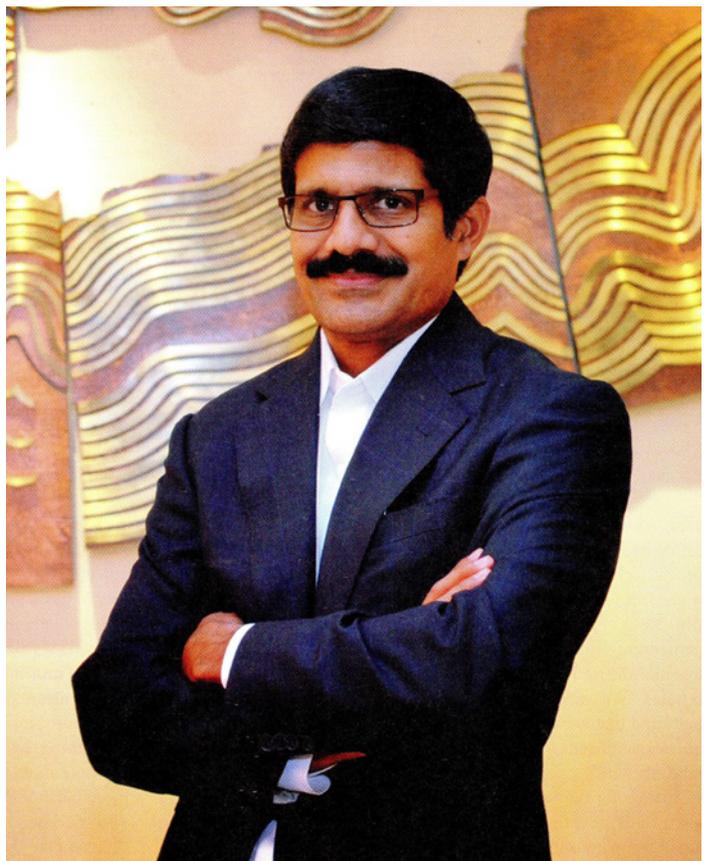
Our vision is to always be a product-oriented company. We cater to the ever-changing demands of various products for textile's downstream industry, as well as providing services to our valued customers in terms of product solutions and development. APF develops its own production processes, manufacturing and technology which are continually evolving to create future demand through collaborative customer partnerships.

We partner with our customers on mutually beneficial and long-term relationships. We are eager to learn and collaborate with our customers as the industry becomes more competitive, the product cycle is shortened and demand rises for small batches. Due to the retail revolution and the wave of digitalisation, the market is now redefined. In our strategic view, we want to reaffirm and accelerate our journey towards being a highly agile and innovative polyester player. Aside from meeting customers' demands, together we, as a solution provider, are also willing to find out what a customer needs to grow their business and the industry.

Aditya Birla Group is an esteemed business group with a decades-long track record. A truly professional conglomerate with a global presence, Birla Group's philosophy towards business is a

great legacy for our industry. APF and Birla Group share the same focus as product-oriented companies creating customer partnerships and becoming product leaders in the fiber industry. We both strive to continuously improve product quality, consistency, and the level of service for our customers. APF and Birla Group have a unique customer-supplier relationship wherein we work together intensely to improve product performance and specification through raw material performance improvement within their plant.

APF has always been an integrated, product-oriented manufacturer. We are therefore looking to further strengthen our relationship with forward looking, vertically integrated and product oriented companies such as Birla Group. We value our relationship and the opportunity we have been provided to share our vision. Today's business ecosystem requires synergy. That's why we embedded the spirit of togetherness in our slogan: "winning together."



[LEARN MORE](#)



Aditya Birla further prides itself on its approach to corporate social responsibility, with community work focusing on healthcare, education, girls, sustainability, the empowerment of women and the promotion of social reform. To that end, its Centre for Community Initiatives and Rural Development, led by Rajashree Birla, Chairperson, reaches nine million people a year. The company at large runs 56 schools providing education to over 46,000 children, of whom 18,000 are “underprivileged”, as well as 20 hospitals covering a million villagers. Rajashree Birla has said the mission is: “To actively contribute to the social and economic development of the communities in which we operate. In doing so, build a better, sustainable way of life for the weaker sections of society and raise the country’s human development index.”

The group’s textile business is no less diverse than the rest of the business, although it is the field in which the company first gained success. Spread across a number of geographies and incorporated in different subsidiaries including

**“Great businesses are never built on the quicksands of opportunism”**



yarn manufacturer PT Sunrise Bumi Textiles of Indonesia, Thai Acrylic Fibre Co. Ltd, and Mumbai's Grasim Industries, the world's largest producer of viscose rayon. A recent textile-focused move by the group was the expansion of Birla Cellulose's Vilayat factory in Gujarat via a INR40bn investment.

Grasim Industries is described by Aditya Birla as its "flagship company", having begun as a textiles manufacturer in 1947. As part of Grasim, Jaya Shree Textiles manufactures linen and wool, and is active in a number of business units, including linen spinning, linen fabric, wool combing and worsted spinning. Despite being an Indian company, the operation is international, with high-tech spinning systems from Europe, and raw components such as flax from France and Belgium.

Grasim recently released its results for Q3 of the financial year, detailing revenue growth of 5% for the previous nine months. The company's flagship status is reinforced by an employee-count of over 21,000 people, with net revenue of over \$10bn and an EBITDA of \$1.8bn in 2019, representing a significant proportion of Aditya Birla's total.

The company has recently introduced a new logo, which it says represents its newly vibrant persona and will carry the brand into the future while reflecting the changes over the past 20 years, including



**“Aditya Birla wants to build a better, sustainable way of life for the weaker sections of society and raise the country’s human development index”**



an increase from 0.4% to 14% women in the “managerial cadre”. Chairman Kumar Mangalam Birla said: “In essence, we are a much more dynamic, vibrant, youthful Group across five continents. In keeping with this change, I felt the need to refresh our earlier logo. Contemporising it made sense. It has served its time and helped build our Group identity and lent heft to our Group’s business identity.

“Our new corporate mark is a fine blend of continuity and change. So it admirably captures our legacy and moves on with modernity. Our energy derives from the sun, termed Aditya in our mythology, and so closely linked with the name of our legendary leader and my father, Aditya Vikram Birla. His persona evoked all that is positive in business and in life.” ■



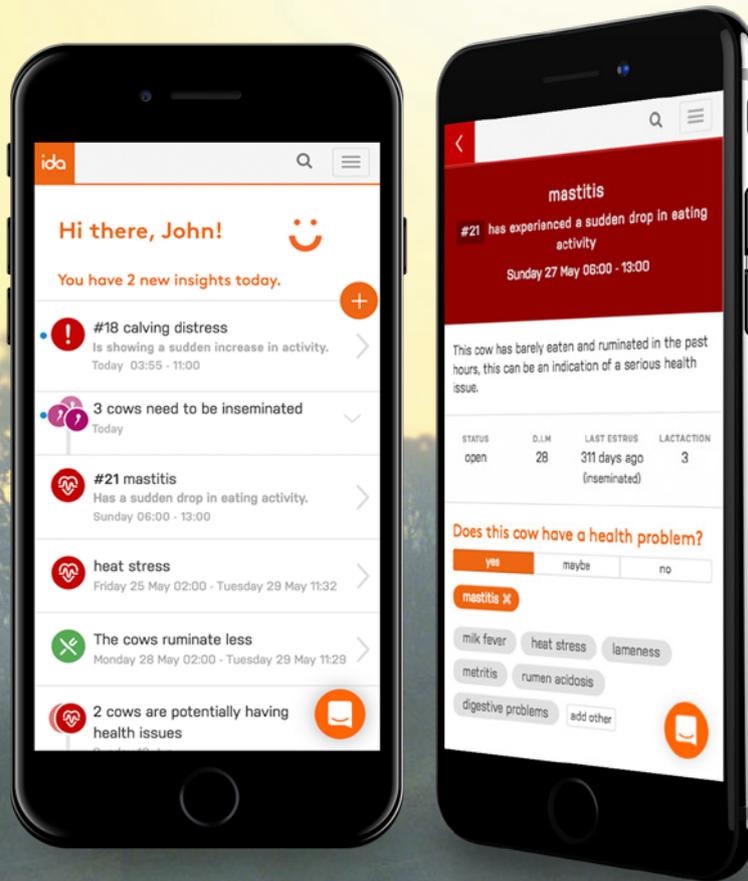
**ADITYA BIRLA GROUP**





# Hi, I'm Ida!

The Dairy Farmer's Assistant.



I help farmers run the most efficient dairy farm possible!

I answer all farm related questions, help farmers identify and diagnose issues before they become critical, and support farm optimization.

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