ROBECO
The Investment Engineers

SIX.

SUSTAINABLE INVESTING EXPERTISE

SO YOU THINK SUSTAINABLE INVESTING IS EASY? THINK AGAIN

SIX. includes **fourteen** pages on impact and outcome • **two** big interviews • **four** eye-openers • our **five** engagement themes • a **twenty-four/seven** engagement specialist • **ten** messages in a bottle • **one** spy in the sky • **eight** times #mySDG • **seventy-two** pages of thought leadership

Sustainable Investing Expertise by ROBECOSAM

Colophon

SIX. is published by Robeco
March 2020

Editor-in-chief
Peter van Kleef

Editorial team
John Coppock, Anna Heldring, Heather Lane, Erika van der Merwe, Yann Morell y Alcover, Clarinda Snel

Photography
Sander Nagel, Getty Images

Art Design
I.V.O., Culemborg

Printed by
Damen Drukkers, Werkendam

Other Robeco and RobecoSAM contributors, in alphabetical order
Chris Berkouwer, Laura Bosch, Cristina Cedillo, Alexandra Christie, Robert Dykstra, Peter Ferket, Holger Frey, Roland Hengerer, Cedric Hille, Erik Keller, Carola van Lamoen, Ronnie Lim, Jacob Messina, Guido Moret, Frank Onstwedde, Folmer Pietersma, Kenny Robertson, Rikkert Scholten, Anouk in 't Veld, Sylvia van Waveren, Peter van der Werf, Masja Zandbergen, Machiel Zwanenburg

Special thanks to
Natalie Fee, Megan Hewlett, Jo Morley (Refill UK), Karen Maas (Erasmus University), Robert-Jan van Ogtrop (Circle Economy)

HIGHLIGHTS

NICE TO KNOW

EXHAUSTIVE ENGAGEMENT MEANS MORE ELECTRIC CARS

There is nothing like seeing the fruits of engagement when the company not only listens, but takes real action. The Transition Pathway Initiative's engagement work achieved some breakthroughs earlier this year, as two major carmakers have set a long-term ambition of achieving net zero emissions by 2039 and 2040 respectively.

This is being done by switching from the internal combustion engine to cleaner power systems, including hybrids. One of them has gone as far as to bet on a single drivetrain technology, focusing on battery-powered vehicles. It has committed substantial capital expenditure to this technology over the next few years, the only carmaker to have done so.

Passenger vehicles currently account for about 7% of global CO_2 emissions (12% in the EU), and about 45% of world oil demand. The TPI encourages carmakers to change their business models to make more carbon-neutral vehicles. Robeco is proud to be a funding partner of the TPI, which was founded by the UK Environment Agency and the Church of England.

DECREASING VALUE'S FOOTPRINT

One conundrum for value equity investors is that their portfolios tend to have large environmental footprints, as measured in terms of greenhouse gas emissions, water use, waste generation and energy consumption. This is mainly due to the structural tilt of conventional value strategies towards asset-heavy sectors, such as energy, utilities and materials.

So, are value and sustainable investing irreconcilable? Not so fast! Robeco research shows that the environmental footprint of the value factor can be decreased without compromising on return and risk characteristics. That's because only a limited number of companies with extreme environmental footprints tend to be responsible for a significant part of the overall footprint of a value portfolio.

It is therefore possible to reduce the footprint of a value portfolio by lowering its exposure to the most polluting companies. For that, Robeco has designed a methodology that adjusts the value score of stocks with a significant environmental footprint. In other words, if some cheap firms have significantly large footprints, we adjust their valuations and make them less attractive from a portfolio selection perspective.

DIG IT! OR MAYBE DON'T

- Spending one bitcoin consumes 654 kilowatt hours of electricity, equivalent to 776,000 Visa transactions. The energy needed to process the immensely complex blockchain algorithms necessary for one single transaction would power 22 US households for one day.
- In 2019, the total energy consumption of the entire bitcoin network, including the 'mining' cost of making units of the cryptocurrency, was calculated to be 52.1 terawatt hours per year, or higher than the entire annual electricity consumption of Romania.
- Put another way, that amounts to 0.34% of global energy consumption and 35.1 million tons of CO_2, equivalent to what four million petrol-engine cars produce in a year.

Source: 'Bitcoin Energy Consumption Index', Digiconomist research, November 2019

ACTING ON CLIMATE CHANGE

The impact of climate change, if left unaddressed, will have serious long-term consequences for society and the global economy. That's why Robeco accepts and embraces the responsibility that the asset management industry has in addressing climate change risks, through its investment decisions and through contact with investee companies and other institutions.

We are acting now, as shown by the strategy which we have adopted. We commit to:

1. Decarbonizing assets under management and align with a global 2°C emissions reduction pathway, where we have discretion over the investment approach;
2. Analyzing climate-related investment risks and opportunities relating to our clients' investment portfolios;
3. Identifying new opportunities to offer climate-related products and investment solutions;
4. Raising awareness about climate change risks and engage through dialogue with clients, investees and the public;
5. Tackling our own carbon footprint head-on.

The way we see it, escalating climate-related investment risks will increasingly force asset managers to include ESG considerations in their investment strategies. As a consequence, integrating ESG factors into investment decisions will likely become more mainstream.

CIO TALK

Setting the pace

Robeco is pushing forward at great speed. We started integrating ESG into our investment processes years ago, based on the firm conviction this would lead to better-informed investment decisions, and work hard every day to maintain our current leading position in sustainable investing (SI). Yet while better-informed decisions are a huge step forward, it's now time for our industry as a whole to start making a real impact in this world we share. There is a clear need for socioeconomic improvement, alongside competitive financial returns. Impact investing is one solution we embrace. Another way forward is active ownership. At Robeco, we have moved away from the confines of shareholdership towards the broader remit of stakeholdership: we invest in real companies, not just in shares.

That philosophy comes with a responsibility – for the employees of the companies we invest in, for all parts of their supply chain, for their customers, for the shareholders, for society and for the natural world we live in. This is the future of investing and that future is now. We may not be the biggest name in the asset management industry, but we are leaders in SI. And we are glad to see other, bigger asset managers now following suit. Society and the planet will ultimately benefit from this growing trend. And we will continue to innovate. This is not the time to be complacent. The world around us is moving fast and we need to make sure it's moving in the right direction. Asset managers have an important role to play in this process. After all, money talks.

Peter Ferket
CIO Robeco

ROBECO RANKS FIRST IN SI SURVEY OF GLOBAL ASSET MANAGERS

Robeco places great value on the external verification of our sustainable investing approach. That's why we were delighted to be ranked first for sustainable investing in a survey of 75 asset managers by ShareAction.

In an update to its 2017 ranking, the UK-based group reviewed the sustainable investment practices on governance, climate change, human and labor rights, and biodiversity of the world's largest asset managers.

Based on data collected through an extensive survey aligned with the Task Force on Carbon-related Financial Disclosures project, as well as publicly available information, the report gives an overview of global trends in the adoption of SI within the asset management industry.

It then ranks them based on disclosure and management of ESG risks and impacts across their portfolios. And this year, Robeco came top. Much larger firms did not fare so well: many of the world's biggest asset managers are among the worst performers on SI, ShareAction says.

"We are extremely proud to be recognized as a sector leader in ShareAction's assessment," says Carola van Lamoen, Head of Active Ownership. "Robeco's place at the top of the leaderboard reflects our long-standing history in this field, and our commitment to driving positive change through rigorous stewardship and a focus on ESG integration."

"We acknowledge that in order to truly meet the challenges in the natural and social world, industry standards must be raised across the sector. We hope this ranking will inspire the industry into taking more action as we continue to play our role in educating and sharing best practices."

THE $6 TRILLION COST OF CYBERCRIME

Think that the drugs trade or gun violence are the biggest form of crime in the world today? Think again. Cybercrime, the illegal manipulation of computer systems, is now estimated to cost USD 6 trillion a year.

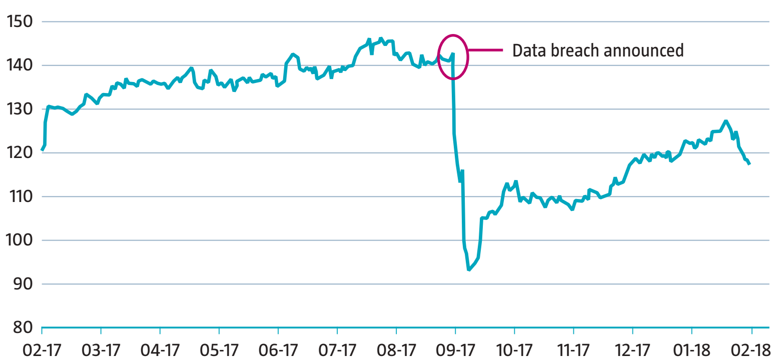
It began as simple hacking to steal users' bank account information from email addresses or fake 'phishing' links. Now it has morphed into the kind of sophistication that requires expert-level knowledge to both formulate and fight.

Analysis by the FBI shows that malware now affects more than 100,000 computers a day around the world and involves USD 1 billion in ransom payments. It's rich pickings for thieves as the number of computers connected to the internet is set to reach 50 billion devices this year.

So, how to combat it? Testing a company's cybersecurity is now a routine part of sustainability analysis at Robeco, forming as much a normal part of analysis as looking at other risk factors such as vulnerability to bad weather or labor disputes.

A company without proper locks on its digital doors may not make it into portfolios – that's how seriously the issue is now taken. The graph below shows what happens when you get hacked: it's a risk that investors including Robeco now routinely look for.

CLOSING SHARE PRICE OF A HACKED COMPANY, FEB 2017-FEB 2018



Source: Bloomberg

The welcome rise in sustainability means more investors are using ESG in their daily activities. However, many are claiming to be more sustainable when they are in fact only making token gestures towards sustainability. This is known as greenwashing, and sadly, it is also on the rise.

GREEN, GREENER, GREENEST. REALLY?

green·wash·ing | \ ˈgrēn-ˌwȯ-shiŋ\: *Behavior or activities that make people believe that a company is doing more to protect the environment than it really is –* Cambridge Dictionary

There are three aspects to greenwashing:

1

Strategies that only apply simple exclusions and are still labeled as being 'sustainable' should be a thing of the past. There should be more to sustainable investing than just using a negative screen.

2

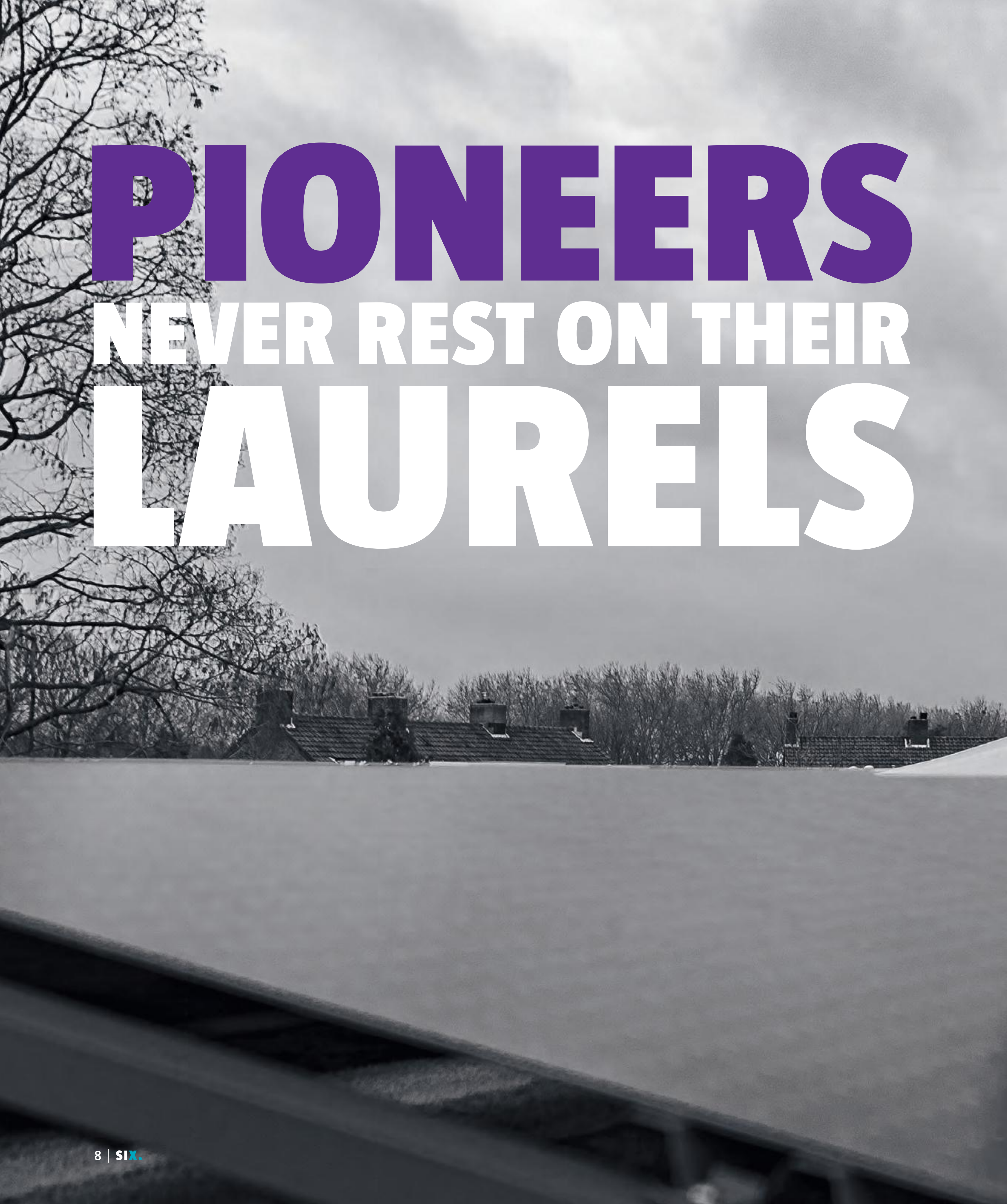
A strategy can only really be sustainable if it is also financially sustainable. Integrated thinking is important. How do long-term ESG trends and external costs such as climate change, loss of biodiversity and rising inequality lead to changes in business models? This means thinking hard about how sustainability affects companies and investment strategies.

3

Active ownership is important. Truly sustainable investors will use voting and engagement to encourage companies to become more sustainable. Passive funds, for example, cannot do this – they simply scoop up the wheat with the chaff.

To try to make things clearer, the EU is in the process of defining an ecolabel, so that the public can trust what is said to be sustainable. Other SRI labels can be misleading. Our advice? Look closely at what's really on offer. If it doesn't have ESG properly integrated, it's greenwashing.

PIONEERS NEVER REST ON THEIR LAURELS



It had to be taken, that one photo. On the roof. Her roof. Despite the objections of a photographer afraid of heights Masja Zandbergen, Head of ESG Integration, insisted that she be standing between the solar panels on the photo. Proudly. Because the house – her house – is clear proof that it's possible: to make a difference. If you want to. If you have vision. And if you're willing to invest.

KNOWLEDGE IS NOT SUPPOSED TO BE A POOL OF STANDING WATER

Her climate-neutral home in the north of Rotterdam, built in 2017 on former football training grounds, is a shining example of how everyone can help to build a better, more sustainable future. For example, thanks to heat generated within the Earth, the groundwater – at 80 meters below ground level – stays between 13 and 15 degrees Celsius all year round. It is pumped towards the surface, compressed and circulated through the underfloor heating system. Geothermal heat, solar panels, smart use of natural light, and you're there: a climate-neutral house, with no gas and very little electricity. "You have to dare to invest, but you recoup your costs within a few years. Our energy bill is now extremely low."

And investing – to reap the rewards later – is what it's all about, also in her role at Robeco. But the willingness to invest in sustainability only emerges once people become aware of the need, or the opportunities. And that awareness, Zandbergen notes, has really gone into high gear in recent years. At the start of her career, in 1997, Zandbergen – who didn't like to invest in companies that used child labor or had poor working conditions – was met with resistance from portfolio managers when she talked about sustainability considerations.

Now, analyzing both the risks and opportunities of sustainability has become an essential aspect of every financial analysis. "Everyone is more aware of it, society is changing and you see global unrest about the climate, but also about wage inequality, for instance. Companies realize they are being held responsible by shareholders for their CO_2 emissions, production of single-use plastics, tax morale, and so on."

But increased awareness is not enough. Not by a long shot. "There is still a significant lack of knowledge and understanding in relation to sustainability," says Zandbergen. "And for the asset management industry, we have a long way to go when it comes to effectively implementing sustainability in portfolios. There's much more to it than taking part in a race to be the first to offer a trendy new fund just because it will attract new clients." The industry has to take steps, and that's causing a different kind of conflict. You're competing with your peers, you want to be the best, but at the same time you need everyone to move in the right direction. Because working together is the only way to get change on the agenda. And Robeco is leading the pack, she says.

"Our internal research is second to none, thanks to RobecoSAM, our Swiss affiliate; our portfolio managers understand the importance of that research. They know how to implement the data, and also why it is crucial in the analysis of future risks and opportunities." And that knowledge is not a pool of standing water: it's constantly moving. "Our quantitative researchers have succeeded in developing a 'decarbonized value' methodology. There was a lot of pressure to do so, because clients wanted a value portfolio with a smaller footprint, in other words, lower CO_2 risk. Many traditional value companies are part of old, polluting industries. The researchers have now developed a model that enables them to continue exploiting the value factor, yet substantially reduce their footprint."

But don't think for a second that Zandbergen's resting on her laurels now, because despite the daily progress, much remains to be done. We are still at the very early stages of being able to measure impact. "We've got a long road ahead. I want to keep moving forward. We are building risk models, factor models that incorporate ESG criteria in their calculations. We have developed ESG scores for companies. We hold dialogues with many companies. But at the end of the day, you want to know – be able to measure! – what you have achieved in the real world. And it's there that our impact is difficult to measure, because we don't create or produce anything."

"Will the world be a much safer place if we exclude a company that manufactures controversial weapons? If we exclude, will the investment then be made by investors who care less? And if we lower the carbon footprint of a portfolio, how does this affect the real world?" **There is still little research available to answer these questions**. Clients want fewer risks in their portfolios, including fewer climate risks. From a stewardship perspective, they also want to invest responsibly. For now, non-financial impacts are difficult to measure. With Northern Europe leading the pack, the financial industry is working on finding solutions to measure this non-financial impact. "Some elements can't be included in financial analysis yet," says Zandbergen. "You can include CO_2 risks in your valuations, but this would be a lot easier if there were a unit price for carbon."

Can the financial industry give the world a push in the right direction? Is it, perhaps, even its responsibility to do so, as an owner or manager of large sums of capitals? It's no wonder the industry is in soul-searching mode. And, in a sense, the same applies to Zandbergen. "The question is: where does the responsibility begin and where does it end? If a government decides to build coal plants, should we exclude it? This is one of the many dilemmas the industry is struggling with. And we also have to deal with competitors, NGOs and other players, as well as the question of how certain, big decisions would have an impact on our investment universe."

The palm oil industry presents such a dilemma. Palm oil production poses a threat to the Earth's rainforests. "We have a strict lower threshold: half the production must be sustainable. If companies are nowhere near this limit, we can discuss it until the cows come home, but they'll never get there. We exclude such companies. For other companies, we make it very clear that we expect them to meet this requirement. And in these cases, we can have a real influence." →

In a recent study entitled 'Can Sustainable Investing Save the World?'[1], the authors distinguish between three mechanisms of investor impact: shareholder engagement, capital allocation and indirect impacts. The latter includes stigmatization: naming and shaming. Impact in this study is defined as "change in a specific social or environmental parameter that is caused by an activity." It states that the concept of investor impact is only beginning to take root in the financial industry, and concludes by saying that 'simple' exclusionary or best-in-class strategies are a static approach that ignore the fact that, fundamentally, impact is about change. After reviewing 64 studies, the authors conclude that there is no evidence to support the effectiveness of indirect impact. But there is some evidence to support the fact capital allocation – exiting and entering into investments based on ESG scores – does have a positive influence. The evidence shows that screening approaches affect asset prices, although the extent to which they do so is not consistent. A recent ECB working paper[2] sheds some light on this. It finds that for given levels of economic and financial development, carbon emissions per capita are significantly lower in economies where equity financing is more important relative to bank lending. The paper concludes that stock markets tend to reallocate investments to more carbon-efficient sectors and also facilitate the adoption of cleaner technologies in polluting industries.

In their paper 'Is Exclusion Effective'[3], Robeco's Laurens Swinkels and David Blitz argue the opposite and favor engagement over exclusions as a mechanism for change. And, indeed, the meta study mentioned earlier shows that investors can have the greatest influence on the ESG behavior of companies through engagement. This is consistent with our own findings based on two studies of our engagement database, with data going back to 2005. We found that the companies with which we have engaged successfully have shown significant improvements in ESG scores.

1. Kölbel, J.F., Heeb, F., Falko, P. and Busch, T., 2019. "Can Sustainable Investing Save the World? Reviewing the Mechanisms of Investor Impact", MIT Sloan, University of Zurich, Department of Banking and Finance, Center for Sustainable Finance and Private Wealth (CSP), University of Hamburg.
2. De Haas, R. and Popov, A.A., 2019. "Finance and carbon emissions", ECB Working Paper No. 2318. Available at SSRN: https://ssrn.com/abstract=3459987 .
3. Blitz, D. and Swinkels, L., 2010. , 'Is Exclusion Effective?" The Journal of Portfolio Management Ethical Investing 2020, 46 (3) 42-48.

I HAVE AN ANALYTICAL MIND. I WANT TO SEE EVIDENCE. SCIENTIFIC STUDIES.

But sustainability goes far beyond areas such as deforestation and global warming. The social aspects – the S in ESG – also feature daily in the media. And these apply to many more industries and sectors than climate issues do. "In our financial analysis of companies, it is fairly easy to include corporate governance. The social issues are slightly more difficult and often have slightly less impact on financial analysis. Business ethics, decent wages, access to medicines – that type of thing."

So, is it a question of picking your battles? As far as Zandbergen is concerned, you're asking the wrong person. "No," she says emphatically. "We want to tackle everything. Where you place the emphasis just depends on the sector or region. Wage inequality is now increasing in the West, too, with social unrest in various places as a consequence." It is these social issues that touch Zandbergen, mother of two teenagers, the most. It's a theme that also resonates with young people the world over, with social unrest fragmented across the world as a result. Yet it's not them, with their climate change school strikes, who will save the planet overnight.

"Every generation in the past 60 years has taken to the streets. Let's hope that in 30 years, the world will have succeeded in making everything reusable and recyclable, and that we have managed to bring global warming to a halt." Until then, Zandbergen has another concern. "I sometimes wonder whether we are creating a hype when it comes to sustainable investing. Every asset manager is claiming to be sustainable and have sustainability in their DNA these days. That's why I always try to direct our thinking towards concrete results. Are we really contributing to a sustainable future, with everything we're doing?"

She sighs deeply. "I have an analytical mind. I want to see evidence. Scientific studies. Sustainability is on many people's lips. Awareness is growing. But what impact have we made? The EU's new green taxonomy is a good initiative, but will that bring about the change we need? I don't know. I do know that we have to do all we can and as responsibly as possible. And there's so little being taught about sustainable investing, even at universities. We have to reach the point where we can analyze a company and say: 'They make X amount of profit, but have Y negative impact on (for example) biodiversity, and Z impact on climate change. At the moment, though, we can't put a price tag on Y and Z. **But we're working on it**."

Fast forward to 2030, the year in which the UN's 17 SDGs have to be met. "We have to have achieved many of the SDGs by then. Is that possible? Yes. People are often too cynical. The regulators and asset management industry have woken up. We can do it. But we really need to roll up our sleeves, instead of writing 400-page taxonomies. While these help, our work shouldn't stop there."

Another area of research that might help in assessing actual impact is integrated thinking. At Robeco, we systematically integrate material ESG issues into every investment case. We use a very clear framework that is different for each strategy. The process of quantifying external factors is becoming clearer, as our analysts work with sustainability information which often gives better insight into companies' behavior and practices. In the past, we have seen examples of this: for many years the fundamental right of data protection was not deemed to be an issue by the market, until problems started to occur. By taking a long-term external view, our ESG analysis had already addressed this issue as a risk for internet and IT companies and it was taken into account in our cases and valuations by raising the cost of capital in our model. Although the direction was clear, knowing how much to raise the cost of capital is more of an art than a science, and relies on the experience of the analyst.

We still have very little evidence on how much these external factors influence value drivers and thus company valuations. Integrating ESG issues means assessing how long-term ESG trends and external costs – like climate change, loss of biodiversity and rising inequality – lead to changes in business models or have an impact on company valuations. Costs that may seem external at one moment in time may be internalized at another. These developments can, of course, also offer competitive advantages or open new markets for companies. The flipside of every ESG risk is that it may constitute an opportunity for another company. One attempt to quantify these external factors is the integrated profit and loss (P&L) methodology. This takes into account not only the financial value created by businesses but also other sources of value created.

A few companies have dared to come up with an integrated P&L. Many assumptions underly their analysis, however it should give companies and eventually investors more insight into the external costs or value they are creating.

PLASTICS

Plastic waste is possibly the biggest environmental threat facing the world after global warming and deforestation. The statistics behind the plastics industry are staggering – one million single-use plastic bottles are produced every minute and up to 70% of them are never recycled. Most end up in landfill or the ocean, creating a plastic tsunami that is destroying marine life. Unless this is stopped, experts predict that by 2050 there will be more plastic in the ocean than fish.

But it isn't all bad news. Plastic as a product is indispensable. Modern shopping without plastic for packaging would be impossible, and it has uses that go far beyond packaging. The strength and lightweight nature of plastic means it can be found in sustainable products such as wind turbines, electric cars and weather-proof building materials. Banning plastic is neither possible, nor desirable.

Instead, we simply need to change the way we use plastics. Investors are flexing their financial muscle to support the development of new kinds of chemical recycling, where the plastic polymer is reduced into its individual monomers, which can then be reused for plastic production.

Plastic shopping bags are now being made stronger so that they are easier to reuse. And for the plastic products that have limited reuse, such as food wrapping, companies are working to make them biodegradable when they go to landfill.

Meanwhile, if we are willing to change our habits, single-use plastic bottles can be phased out. Robeco has been proud to support the Refill campaign, which encourages people to fill up their reusable bottles with free tap water instead of purchasing water in disposable bottles. This has already stopped 100 million bottles from entering the waste stream in the UK alone.

The answer lies in changing use, changing habits and changing direction. Don't hate plastics – change plastics.

THERE'S A TIME TO BE SILENT AND A TIME TO SPEAK UP

MESSAGE IN A BOTTLE

REFILL CAMPAIGN STUNNING STATISTICS

Robeco is proud be an official partner of City to Sea as part of our long commitment to sustainable investing. Our unique partnership has the power to reach, influence and drive change in the corporate sector to prevent plastic pollution at the source. We are committed to doing even more together in 2020 and beyond.

20
thousand food-to-go locations

The concept is expanding to cover more refill and reuse options such as hot drinks, soup or sandwiches across thousands of food-to-go businesses. The customer buys the product and puts it into an existing container, avoiding new single-use plastic packaging. **Most of the biggest UK high street food-to-go chains** have already signed up, along with thousands of independent businesses

100
million plastic bottles saved

The campaign encourages people to fill up their reusable water bottle for free at Refill Stations rather than using a single-use plastic bottle. It is now on track to save **100 million plastic water bottles** from entering the waste stream.

30
thousand outlets

There are now almost **30,000 Refill Stations** along British high streets and at transport hubs, where shops, cafes, restaurants and civic offices allow the public to access free tap water on their premises. Their locations are listed in the app, with a sticker in the window to say they're onside. People simply walk in, fill up, and walk out. Businesses like the spin-off advantage of Refillers often buying something as well!

101
airport fountains

Airports present a problem because any liquid container of more than 100 ml must be discarded before going through security. Heathrow Airport was the first to sign up to the Refill campaign, installing **100 fountains** across its five terminals. Robeco has also sponsored a water fountain at London City Airport to allow passengers to refill their bottles after going through security.

70
million views

The inaugural National Refill Day – a public awareness campaign to promote reuse over single-use – was held in the UK on 19 June 2019. Over **70 million people** saw it on social media, websites and through more traditional publicity methods such as media or posters in participating Refill Stations. This year, the campaign is going global!

1
million per minute

So, the Refill campaign is making a difference, but there is still a long way to go. **One million plastic bottles** are purchased around the world every minute, a figure that is predicted to rise by another 20% by 2021. Sadly, up to 70% of these bottles are not reused, and much of it ends up in the oceans. So download the Refill app and find out where to refill your bottle for free!

20
railway stations

A new initiative is plastic-free travel, expanding the Refill concept from the high street to railway stations. Network Rail has installed water fountains at each of its **20 mainline stations** across the UK, including the major termini in Birmingham, Manchester, Edinburgh, Glasgow, and 11 in London.

20
thousand students

City to Sea are also campaigning for 'plastic-free periods' – targeting the plastic waste from single-use menstrual products, which are now the fifth most commonly found item on European beaches. An educational program aims to reach more than **20,000 students** highlighting the alternatives, such as reusables.

270
thousand downloads

Refill's stations are listed on a location-based smartphone app that can be downloaded for free from either the App Store or Google Play. The app was **downloaded 100,000 times in 2018** and surpassed the quarter-million mark in 2019. It will soon be available in other languages, including Japanese, Spanish, French, German and Arabic.

IT WASN'T A STRATEGIC APPROACH FOR US TO SAY, LET'S MAKE SURE WE DO ECUADOR

City to Sea stands at the forefront of 'boots on the ground' sustainability, taking direct action to cut plastic pollution. As the stunning statistics on the previous pages show, the award-winning Refill campaign is making a real impact on stopping plastic from entering the waste stream. Founder Natalie Fee explains why 2019 was so special, and what their plans are for this year.

"Last year was big for us in terms of growth – we started the year with 20 people and now there are 32 of us. The team has been going from strength to strength. This year, our work has been recognized with a number of prestigious awards, and there has been massive progress on our campaigns preventing plastic pollution at source."

"We've pretty much saturated the high street now, with Refill Stations offering free drinking water on every high street in the UK, so we're now working on plans to expand beyond drinking water. Food-to-go packaging is one of the worst offenders, with millions of coffee cups and food wrappers ending up on our beaches across Europe."

Refill your lunchbox

"We're now starting to expand the campaign so that people can use the app to avoid all single-use plastic. They'll be able to find out where to fill up their reusable coffee cup, lunchboxes, and even groceries. That's going to be a really big shift and a focus for us as we get into 2020."

"We want to change behavior, and create a new social norm so that people stop using single-use packaging, value their resources and start opting for reusables instead. We're working with the food-to-go chains to make it easier and more attractive for consumers by offering discounts if someone comes in for a refill rather than buying single-use plastic packaging."

Plastic-free traveling

"Another natural progression for Refill is within the travel sector – where many people are forced to purchase bottled water. We're now working with Network Rail, who have installed water fountains at all of their stations across the UK, which has already saved more than two million bottles!"

"We're also working with airports. Thanks to our partnership with Heathrow, there are now 100 fountains across the airport. The Robeco fountain at London City Airport went live in January, so you can go through security and fill up for free in the lounge there as well!"

"And we're also working with the hotel and hospitality industry to remove unnecessary plastic from hotel rooms and across their supply chains."

Going global

"The Refill campaign has launched internationally, with Refill schemes as far afield as South America, thanks to environmentally conscious groups that read about Refill's mission and wanted to do it in their own countries."

"We've now officially launched in Japan, Ecuador, Italy and Chile, and are about to launch in Australia. It wasn't a strategic approach for us to say, 'Let's make sure we do Ecuador' – they came to us." The English-speaking countries are obviously easier for us, so it was a bit of a challenge when Japan came on board. It's been fun though getting the app translated."

Flushed with success

"We're continuing to campaign on 'Unflushables' – items like wet wipes which are causing a huge environmental problem when they are flushed down the toilet, blocking sewers, causing flooding and pollution, and even changing the shape of rivers."

"This year, we teamed up with *Lord of the Rings* star Andy Serkis to create a tongue-in-cheek digital campaign to raise awareness of the issue and to encourage people not to flush wet wipes, which is going live in cinemas across the UK this year."

MAKING A DIFFERENCE

LET'S TALK RESULTS

Sustainable investing is finally gaining traction in the marketplace, possibly because the market has started to acknowledge the detrimental effect that issues such as climate change, loss of biodiversity and inequality can have on our economies and companies. To prevent these effects from materializing, it is vital that we start considering the results of our investment strategies not only from a financial perspective but also in terms of their social and ecological effects. We tend to call this impact: a change in a specific social or environmental parameter that is caused by an activity. All our investments have both a financial and a non-financial impact.

It's clear that the asset management industry is in the early stages of designing and fine-tuning this measurement process. In this section, we present and explain some of the work we have done towards measuring Robeco's own impact as a sustainable investor.

The goals of applying ESG information and the types of impact we have as an investor vary depending on the strategy. We find that investors are increasingly aligned on their approach to sustainability, and so we have developed a framework around this. Our approach to sustainability is outlined in the graph. The majority of our investment strategies apply exclusions, ESG integration and engagement. These are grouped under the 'Sustainability Inside' label and do not have explicit, pre-set sustainability targets. This enables us to create portfolios for which material sustainability issues are taken into account, but are not the driving factors for investment.

Beside these strategies, we manage EUR 16.5 billion in assets for which we do have pre-set sustainability targets. This difference in approach is reflected in the average Morningstar globe rating, an independent measure of sustainability that

OUR PRODUCT RANGE AND HOW WE RESEARCH IMPACT

Sustainability Inside

- The majority of Robeco strategies fall into this category, which entails full ESG integration based on proprietary research, exclusions, and voting and engagement.

– AuM: EUR 132 bln*
– Average Morningstar globes 3.3

How ESG integration contributes to alpha in global equity P32

Living Wage platform financials: impact in the garment industry P30

Our approach to tackling climate change P27

Sustainability Focused

- In addition to 'Sustainability Inside', these strategies have an explicit sustainability policy, as well as targets for the ESG profile and environmental footprint that are better than their benchmark.

– AuM: EUR 8.2 bln*
– Average Morningstar globes 4.1

Impact Investing

- In addition to 'Sustainability Inside', these strategies aim to contribute to specific sustainability themes such as energy or mobility, and/or the UN's Sustainable Development Goals.

– AuM: EUR 8.3 bln*
– Average Morningstar globes 4.0

The performance attribution of Global SDG Credits P29

Impact measurement by RobecoSAM thematic funds P24

Column by Karen Maas (From 'investing with impact' to 'impact investing') P34

- For a few strategies ESG integration and engagement is not relevant (i.e. derivatives strategies).

– AuM: EUR 2.5 bln*

* As of 31 December 2019

ranges from 1 globe (low score for sustainability compared to peers) to 5 globes (high score compared to peers). The average rating for our 'Sustainability Inside' funds is slightly above average, while the average rating for our 'Sustainability Focused' and 'Impact Investing' ranges are higher. Based on the Morningstar performance ratings, the sustainability fund range – Sustainability Focused and Impact Investing – certainly does not have a lower performance than the 'Sustainability Inside' range. This supports our belief that we can achieve a positive socioeconomic impact alongside competitive financial returns.

In the pages that follow, we showcase results from our efforts in determining our impact as investors, both financial and non-financial, which support this belief. We set out findings on the extent to which integrating ESG information in our Global Equity strategy contributes to generating alpha, provide insight into the impact of our collaborative work on the Living Wage platform, and discuss our efforts to assess the footprint of our entire investment portfolio.

In addition, we outline the findings of our attribution analysis, which shows the contribution of our SDG credit framework to the performance of the Global SDG Credit strategy. Furthermore, we highlight some of the impact measures calculated for the RobecoSAM thematic strategies, which describe their contribution to environmental and social development.

We would like to express our thanks to Karen Maas – expert on impact measurement, impact investing and CSR; Professor of Accounting and Sustainability at the Open University; and Academic Director of Impact Centre Erasmus (ICE). She has provided us with her views on what impact is, how it should be measured and what work needs to be done to take impact investing to the next level.

THE SDGS WILL MAKE IT EASIER TO ALIGN INTERESTS BETWEEN COMPANIES, INVESTORS AND SOCIETY

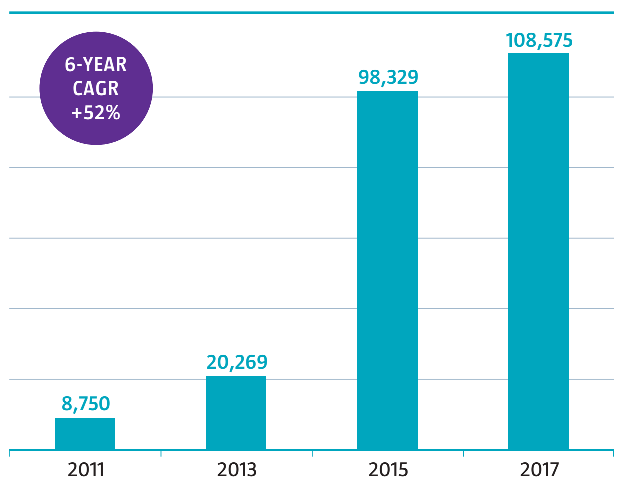
THE CHALLENGE OF MEASURING IMPACT

- **Impact investment – and impact reporting – are here to stay, and we see a strong momentum on both the demand and the supply side that could eventually make impact reporting mandatory for certain types of investments.**
- **Impact reporting is still at a very early stage, with no good, standardized methodologies available yet. RobecoSAM has developed a systematic approach that solves many of the shortcomings. This is illustrated below using our Smart Energy strategy as an example.**
- **Given the different ways of approaching the issue, there will never be a single solution for measuring impact. Therefore, the journey will always be more important than the destination. Doing the calculations enables us to learn about the real impact that companies have, but – owing to the inherent limitations – there will always be challenges in comparing the final aggregated numbers.**

A surge in impact investing

There has been a strong increase in impact investing over the past decade (see graph below), focusing on the impact of the products and services of companies. However, measurement of these impacts is often still lacking.

GROWTH OF IMPACT INVESTING



Source: European SRI Study 2018 (Eurosif)

To enrich our understanding of the value created by companies, RobecoSAM has begun to develop impact reports that systematically describe and estimate the output and impact of the holdings in our impact and thematic strategies. We believe that, by providing tools that enable the comparison of investments on a critical dimension beyond the purely financial, impact reporting benefits not only investors and investees, but society at large.

With the growing popularity of the Sustainable Development Goals (SDGs), there is hope that it will become easier to align interests between companies, investors and society. The SDGs provide a framework and vocabulary to start discussing the impact of companies in a standardized way, and can help investors to make decisions about investment, divestment and engagement.

Showcase for measurement

The ultimate goal is a small set of impact metrics that gives an indication of how well the strategy is aligned with the claimed purpose or theme. These metrics complement the financial analysis by providing a more holistic description of the company, as well as the performance of the strategy.

In order to demonstrate our methodology, we provide the analysis for our Smart Energy strategy, which contains several investment clusters:

- renewable energy generation,
- energy distribution,
- energy efficiency and
- energy management.

In renewable energy generation, two kinds of activity should be considered: the manufacture of equipment (e.g. wind turbines) and the actual renewable energy production by the operators of that equipment. For both activities, hard numbers are often available (e.g. GW of wind turbines produced per year, annual GWh of wind electricity generation). We use a full life-cycle analysis; for example, we include the environmental footprint during wind turbine manufacturing. These numbers can thus be compared with benchmarks, which typically correspond to the average grid carbon intensity at the location where the wind turbine is operating.

For an accurate assessment of a company's impact, it is crucial to also include negative company impact (e.g. from fossil fuel electricity generation) to avoid cherry picking. In addition, to avoid double counting between different companies in the same value chain, the full impact of the activity is distributed to the different companies along that chain.

Finally, company impact numbers are aggregated for the full portfolio impact. For each company, we attribute a share of the company's total impact proportionate to the strategy's exposure to the company as a percentage of enterprise value. We choose enterprise value rather than market capitalization, as we consider bond holders to be proportionally responsible for the company impact.

Results

For RobecoSAM Smart Energy, we aggregate the impact for renewable energy producers, natural gas distributors, and companies engaged in LED lighting and clean transportation products and services. This is measured as the amount of electricity produced from renewable sources and tons of CO_2e emissions avoided as compared to a standard industry solution. The positive impact from the remaining companies in the strategy (energy efficiency, power management, etc.) are not aggregated owing to the difficulty in reasonably quantifying these impacts in a comparable way.

The impact of 47% of companies in the portfolio, representing 31% of the portfolio market value, is aggregated as at June 2019. For the overall strategy, we obtain the following numbers:

- **157** GWh of renewable energy generated, equivalent to annual electricity consumption of more than 39,000 average households;
- **96,800** tons of CO_2e avoided, equivalent to more than 37,000 conventional cars taken off the road for one year.

Renewable energy

- The strategy's holdings in this cluster are associated with 142.2 GWh of renewable energy generated and 61,447 tons of CO_2e avoided over a one-year period.
- For every EUR 1 million invested into this cluster, the holdings represent an avoidance of 647 tons in CO_2e emissions.

Natural gas distribution (NGD)

- The holdings in these companies represent the avoidance of 29,358 tons in CO_2e emissions over a one-year period by replacing dirtier fuels.
- Some NGDs also engage in clean power generation, contributing another 15.2 GWh to the strategy impact.
- For every EUR 1 million invested into NGD companies, this corresponds to 362 tons of CO_2 emissions avoided.

Energy efficiency and clean alternatives in transportation

- The holdings in these companies are associated with an avoidance of 4,989 tons of CO_2e emissions.
- For every EUR 1 million invested into transportation solutions in the strategy, this translates to 129 tons of CO_2 emissions avoided.

Efficient lighting

- The holdings in these companies contribute to the strategy impact by 1,007 tons of CO_2e emissions avoided.
- For every EUR 1 million invested in lighting solutions, the investment corresponds to 98 tons of CO_2 emissions avoided. →

MAKING A DIFFERENCE

Company reporting still lacking

We find that impact numbers reported by companies themselves can typically not be used. Here are some of the issues we found with company reporting:

- Worst-case benchmark: companies compare themselves with the worst-case scenario, e.g. pure coal power instead of the actual generation mix in the location where they operate.
- Aggregation of past and/or future operations: companies count all their historic achievements, or extrapolate this year's result far into the future.
- Ignoring negative impact and cherry-picking the positive aspects.

In the present strategy, all companies assessed show a clear positive net contribution. While this is not surprising given the thematic focus, the impact calculations add further details for more comprehensive peer comparisons. These details can form a basis for further engagement with a company.

Recommendations for interpreting the numbers

General recommendations

In interpreting impact numbers, it is important to keep in mind that there are many non-linear interactions that are difficult to untangle, and that calculating positive impact should never be done for companies in isolation. It is crucial to understand how to use this data: as an indicator only and in combination with other metrics, but never as a target in its own right.

Recommendations for asset managers

- Always do a reality check for all impact numbers.
- Be transparent, honest and humble about the scope. Do not oversell your results.
- Exchange ideas and work towards common quality standards.
- Engage with companies to improve not only impact, but also disclosure.

Recommendations for asset owners

- Do not use impact numbers for direct comparison between funds.
- Do question all assumptions and results, and be on the lookout for greenwashing.
- Put all impact numbers in the right context.
- Spread the word and rally other asset owners to go beyond pure financial metrics.

ALL ASSUMPTIONS SHOULD BE QUESTIONED – BEWARE OF GREENWASHING

THE SMART WAY TO MAKE AN IMPACT, FROM FOOD TO FAIRNESS

Impact investing involves making a difference on the ground alongside generating a financial return. This requires an investment process which intentionally targets companies that are demonstrably making a measurable social or environmental impact on their surroundings.

The impact investment process therefore identifies companies which exhibit social or environmental improvement, in both their products and solutions, and their own operations. Moreover, investors benefit from measurable reported impact at the portfolio level through better risk-adjusted returns.

RobecoSAM started adding thematic strategies to its product range in the early 2000s, investing in companies offering solutions to challenges such as water scarcity, unsustainable sourcing, the distribution of energy, and improving the health of the planet's growing population.

In 2015, when the UN SDGs were introduced, several of these thematic strategies had already captured a number of those goals. Years later, with SDG-linked impact reporting embedded into all of them, every RobecoSAM product has impact investing characteristics.

Here's how we're making an impact while serving our clients at the same time.

1. Sustainable water

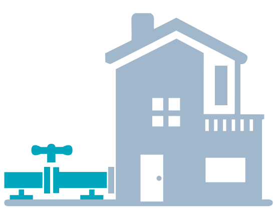
A safe and reliable supply of fresh water is a basic human need. Yet, despite being more valuable than gold in drought-stricken areas, it doesn't seem to hold the importance of other commodities. Water is largely unpriced, allowing some to take more than their fair share, while others go thirsty. Water purification and wastewater treatment are other problematic areas that require extensive investment.

The RobecoSAM Sustainable Water strategy is the world's first of its kind. It invests in companies that use less water for industrial processes and irrigation, reduce evaporation and pipe leakage, tackle contamination and increase desalination from sea water. Over one year, in 2018, the companies in the strategy distributed 51.7 billion liters of clean drinking water, equivalent to that consumed by a total of 646,566 people. →

IMPACT METRICS

The amount of clean water distributed

51.7 billion liters
of drinkable water distributed



Per EUR 1 million invested:
47 million liters distributed

Equivalent to the volume of water used by
430 average households (EU)[1]
each year

The number of people supplied with clean drinking water

646,566 persons
supplied with drinking water

Per EUR 1 million invested:

588 people
supplied with drinking water

The total amount of waste water treated

38.5 billion liters
of waste water treated

Per EUR 1 million invested:
34.9 million
liters of waste water treated

Equivalent to the amount of water used by
735 Europeans[2]
each year

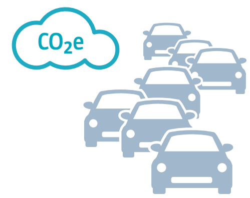
Source: RobecoSAM, 2019.
1. Average household size 2018 is based on 2.3 members www.ec.Europa.eu. 2. Equivalent water used per European is based on 47.5 m³. Source: www.eea.Europa.eu.
The graphic displays the resulting impact of the Water Fund across the 3 impact indicators per EUR 1 million invested. The total investment is associated with the following ownership-adjusted impact over a 1-year period. Holdings as at 30 June 2019, assuming that stable proportion of the companies are held. Market value of the holding is normalized by the company's enterprise value. Based on production numbers from the latest reporting (FY 2018).

2. Smart energy

Renewable energy and smart energy generation facilities are undoubtedly the way forward when it comes to eradicating fossil fuels. Giant wind turbines – some as big as skyscrapers – are the new offshore oil rigs. Solar panels have proven capable of generating enough electricity to power entire cities. Add in hydroelectric dams and biofuels, and we're well on our way to one day replacing coal.

Renewable energy companies in the RobecoSAM Smart Energy strategy produced 157 gigawatt hours of electricity in 2019, equivalent to the annual consumption of more than 39,000 households. This represents a CO_2 reduction of some 96,800 tons, which is equivalent to taking 37,000 conventional cars off the road.

IMPACT METRICS

Amount of electricity produced from renewable sources	CO_2e emissions avoided as compared to a standard industry
157 GWh **of renewable energy generated**	**96,800 metric tons** **of CO_2e avoided**
	
Equivalent to the annual electricity consumption of more than **39,000 average households[1]**	Equivalent to **37,000 cars[2]** taken off the road for one year

Source: RobecoSAM
1. Average electricity consumption per household and year; in MWh (source: www.ec.europa.eu/eurostat).
2. Average carbon dioxide emissions from new passenger cars per year; in t CO_2-eq (source: www.eea.europa.eu).

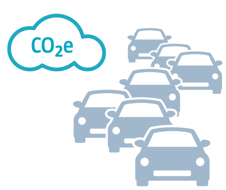
The graphic displays the resulting impact of the Energy strategy across the two impact metrics. The total investment is associated with the following ownership-adjusted impact over a 1-year period. Holdings as of 30 June 2019, assuming that stable proportion of the companies are held. Market value of the holding is normalized by the company's enterprise value. Based on production numbers from the latest reporting (FY 2018).

3. Smart materials

Electric cars have different components from those powered by petrol, not least in their batteries. This requires cadmium and lithium, among other new minerals now being mass mined. Transformation materials are also creating opportunities in lasers, 3D printing and more advanced recycling, not to mention biodegradable plastics and even parts for the human body.

Companies in the RobecoSAM Smart Materials strategy have made a difference by recycling 5,481 metric tons of materials in 2019, equivalent to the annual use of 26,058 people. Some 32,060 metric tons of waste was avoided, equivalent to what is normally created by 65,780 people. And those involved in reducing energy use prevented 465,095 tons of CO_2 from entering the atmosphere, equivalent to taking 326,605 non-electric cars off the road.

IMPACT METRICS

Amount of CO_2e emissions avoided	Amount of material recycled	Amount of waste avoided
465,095 metric tons **of CO_2e avoided**	**5,481 metric tons** **of materials recycled**	**32,060 metric tons** **of landfill waste avoided**
		
Equivalent to **326,605 cars[1]** taken off the road for one year	Equivalent to the annual materials recycled of more than **26,058 people[2]**	Equivalent to the annual waste generated of more than **65,780 people[3]**

Source: RobecoSAM
1. 2017 average CO_2 emissions EU 118.5 g/km; 2015 annual distance driven by car EU 12,009 km; in t CO_2-eq; 1.423 (source: www.eea.europa.eu; www.odyssee-mure.eu).
2. 2014 Recycling rate EU 43.6% 487kg *43.6%= 0.21 tonnes waste recycled per capita (source: www.ec.europa.eu/eurostat).
3. 2017 EU: 487 kg=0.487 tonnes waste generated per capita; in tonnes; 0.487 (source: www.ec.europa.eu/eurostat).

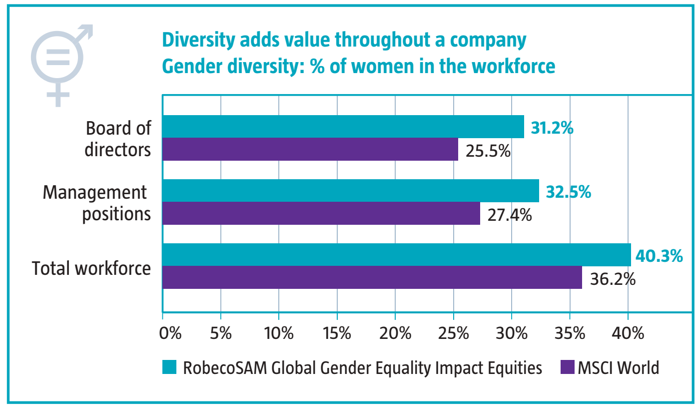
The graphic displays the resulting impact of the Smart Materials strategy across the three impact metrics. The total investment is associated with the following ownership-adjusted impact over a 1-year period. Holdings as at 30 June 2019, assuming that stable proportion of the companies are held. Market value of the holding is normalized by the company's enterprise value. Based on production numbers from the latest reporting (FY 2018).

4. Gender equality

Men and women each make up half the population, yet the disparities in employment opportunities, ranging from equal pay to glass ceilings for female executives, still bedevils business. It's a shame, as research has shown that more diverse companies and those that treat women fairly have a strong competitive advantage. And, therefore, make more money.

The enlightened companies in the Global Gender Equality Impact strategy contribute to making a difference and, uniquely, the strategy looks beyond board-level equality. Research shows that only 29% of board members in Europe are female, while the participation of women in the global workforce has fallen to 35%, and it will take 22 years to close the gender pay gap at the current rate. That's why investing in the right companies can make a difference.

GENDER DIVERSITY IN THE WORKFORCE



Source: RobecoSAM, 2019

CREDITING THE SDG PERFORMANCE

Supporting the Sustainable Development Goals is not only a good way to make a difference, it's also been proven to generate attractive financial returns.

Our dedicated SDG Global Credits strategy outperformed its benchmark by a cumulative 132 basis points, gross of fees, in the 18 months since its launch in June 2018. This confirms that it is possible to develop a sustainability-focused investment process that makes money as well as benefiting society.

The SDG-eligible universe of credits is selected using our proprietary SDG screening methodology, which we developed in 2018 in cooperation with RobecoSAM. This process of screening companies and giving each an SDG score comprises three steps: establish what the products or services produced by the company contribute to the SDGs, analyze how the company's conduct contributes to the SDGs, and determine whether it is or has been involved in any controversies and, if so, whether measures have been taken by the management to prevent this from reoccurring.

The SDG scores range from +3 to -3. Only bonds with a positive or neutral SDG score are eligible for inclusion in the portfolio, representing about 75% of the entire coverage list.

Avoid the losers by watching the SDGs

A closer look at the performance of the SDG Global Credits strategy reveals that issuer selection explains more than three-quarters of the outperformance of the 18-month period, showing that we're picking the right companies. What's more, almost a quarter of this outperformance – 32 basis points – is due to the screening that we carry out to assess a company's contribution to the SDGs. Of this, as much as 26 basis points can be attributed to not investing in companies with a negative SDG score. In particular, avoiding some issuers in the automotive, brewing, financial and utility sectors has had an important impact on performance.

The analysis shows that, as is the case with our entire credits investing process, the idea that it can be more important to avoid the losers rather than always picking the winners is applicable here, too.

This finding also confirms our research into credits data going back five years: credit sectors with positive or neutral SDG scores had a superior risk-return relationship compared to those with negative scores. In other words, risk was lower without returns being diluted.

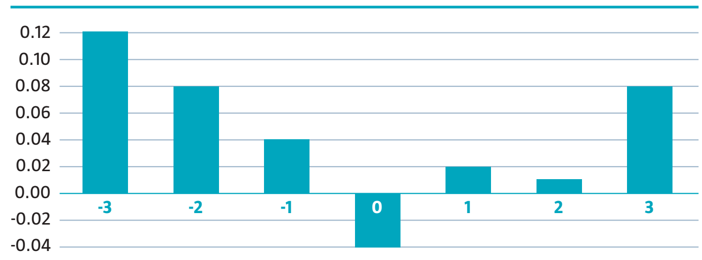
Winning by not losing is a fundamental motto for credits investing and the research shows that our SDG screening methodology is a good fit with this philosophy.

PERFORMANCE CONTRIBUTION FROM SDG-SCORE ALLOCATION

The SDG screening process contributed positively to performance

- Clear relation between SDG score and performance contribution
- Avoiding negatively scoring names had the strongest effect
- On both ends of the spectrum the effect is strongest

Performance attribution



Analysis period June 2018 to December 2019. Benchmark is the Bloomberg Barclays Global Aggregate Corporate Index. Performance attribution of the Global SDG Credits strategy. These numbers are internally calculated estimates, which are only intended to give a rough estimate of the attribution. The attribution figures are not GIPS compliant, and not calculated/checked by our official NAV-team, nor Performance Measurement Team, nor Compliance. Performance attribution in percentage points. Source: Robeco

MAKING A DIFFERENCE

LABOR COSTS SOMETIMES ACCOUNT FOR ONLY 2% OF THE PRICE OF HIGH STREET CLOTHING

2%

WORKING FOR LIVING WAGES

TWO percent. That's how little labor costs sometimes account for the price of high street clothing. The people making the clothes are often on extremely low wages, and in many cases work in sweat shops in emerging markets.

As part of its engagement work, Robeco is a member of the Platform for Living Wage Financials: an investor group formed in 2018 that campaigns to raise pay levels in the textile industry. Twenty companies involved in the garment industry are now engaging with the platform, with much progress already being made in raising pay levels at suppliers.

After a successful first year, the group of 12 – mostly Dutch – financial institutions is now expanding its focus to include the payment of a living wage in the food, agricultural and retail sectors.

"The initiative was started to unite forces from different financial institutions to assess the performance of companies in the garment sector with respect to the payment of a living wage in their supply chains," says Laura Bosch Ferreté, Robeco's Engagement Analyst working on the project.

"We use that information to engage with the companies and raise the bar in the sector. Labor-related issues in the supply chains have been under particular scrutiny since the Rana Plaza disaster in Bangladesh in 2013, which killed more than 1,000 workers after the building they were working in collapsed."

"Rana Plaza was a health and safety issue, but a closer look at the social issues in the garment sector reveals that workers' living standards are so low that they accept jobs with poor labor conditions. A living wage – an income that enables them to make ends meet – not only has an impact on their living standards in the short term, but also enables them to flourish in their communities."

A major challenge is to convince companies that paying higher wages – and therefore raising their costs in a fiercely competitive environment – is in their long-term interests. This is partly why it is so important to prove the financial materiality of ESG factors: to show that it is not only an ethical issue but also enhances performance in the long run.

"There are some financially sound arguments for paying a living wage," says Bosch Ferreté. "Higher-paid workers are more willing to stay at your manufacturing plant, so becoming more skilled and more efficient."

"There is also a cost-saving component as you don't need to keep hiring and recruiting new people. This enables you to focus more on employee satisfaction and improving workers' skills, which in turn will help you improve productivity. Moreover, paying a living wage helps companies avoid the serious reputational, legal and regulatory risks that are associated with poor labor practices."

"We had the first round of assessments in 2018, when we ranked around 20 of the companies we engage with on their progress towards paying a living wage," says Bosch Ferreté. "In the second round, in 2019, we saw some welcome changes in the rankings."

"A good example was a major brand that had actually moved from the 'developing phase' to the 'maturing phase'. They had significantly improved their performance, having introduced a more comprehensive living wage policy and a more comprehensive grievance mechanism to process potential and actual violations of labor-related issues in their supply chains."

"So, we've seen a fair bit of progress in the industry, even though we've only been engaging with these companies for a year. We think this collaborative platform raises awareness about the topic and puts more pressure on the industry as a whole to further improve practices."

GREEN IS GOOD

They're described as liquid impact investing. Green bonds – bonds whose proceeds are used for clearly specified projects with an environmental impact – have been included in Robeco's credit portfolios for years, as part of our strategy of building diversified portfolios. We'll be launching a dedicated green bond fund this year and, in our other funds, we continue to make sizeable allocations to green, social and sustainable bonds.

The market for green bonds has been growing rapidly since the World Bank issued the first such instrument in 2008. This year, inaugural green bond issuances are expected from the governments of countries such as Germany, Italy, Spain and Sweden, and the secondary market is beginning to show depth and sophistication.

Our appetite for green bonds is evident in the scale of our exposure. Robeco's Euro Government Bonds (EGB) strategy, for instance, has a 10% allocation to the asset class, compared to an index weight of less than 1%.

Examples of the green bonds held by EGB are the KfW 2027, which primarily serves to finance wind energy programs, and the RESFER 2047, which helps to finance a more energy-efficient French railroad system.

The green bond allocations in the EGB strategy cover a wide range of projects, the largest of which concern clean transportation, water management, renewable energy and green buildings.

Using its methodology to estimate the CO_2 reduction achieved through green bonds projects, Moody's argues that investments in renewable energy are the most efficient in achieving decarbonization.

Applying Moody's methodology to the EGB strategy suggests that the green bond holdings have helped to finance projects resulting in an estimated reduction of 3.7 million kilograms of carbon emissions. To break it down somewhat, the calculations show that every USD 1,000 invested in the renewable energy green bond projects to which the strategy has exposure generates a 500 kg reduction in CO_2 emissions; 175 kg in CO_2 emissions reduction result from clean transport projects, and energy efficiency projects ensure a 60 kg reduction. Additional, albeit smaller, emissions reductions are achieved by other green bond investments.

With their clearly defined scope and transparency, green bonds are effective tools for achieving impact. It's no wonder, then, that the market for this asset class is growing rapidly, with strong investor appetite for new green debt issuances by corporates and governments.

RE: THE CIRCULAR ECONOMY

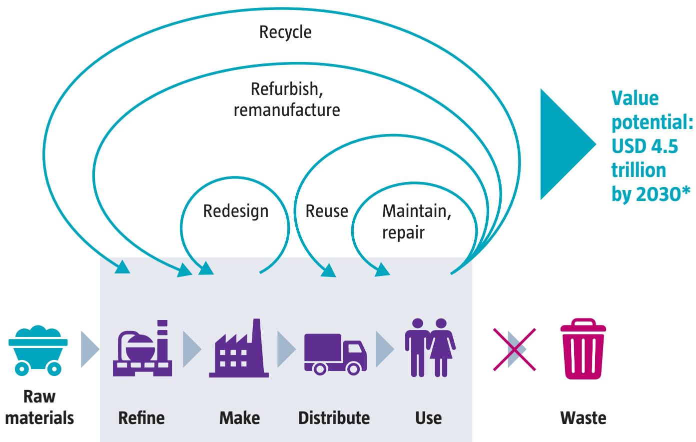
We're all familiar with the existing linear 'take-make-dispose' economy, by which we extract resources to manufacture products and then dispose of them once they have served their purpose. And we all know that this has to stop, but how do we move towards a less wasteful model?

RobecoSAM's new and innovative Circular Economy Equities strategy targets companies that aim to eliminate waste and facilitate the continual use of resources. In that way, what was once waste becomes a resource, creating a loop. The circular economy concept is not yet used on a national level, but is being gradually developed in the commercial arena.

The market for this is estimated to be worth USD 4.5 trillion by 2030. Think of any process beginning with the letters 're' and you'll have some idea about the kind of companies whose shares will be sought.

Recycling, reusing, redesigning, remodeling, refurbishing, repairing, renewable and regeneration. It's reworking investing, it's making an impact, and it's ready to roll.

REDESIGN, REUSE, REPAIR, RECYCLE

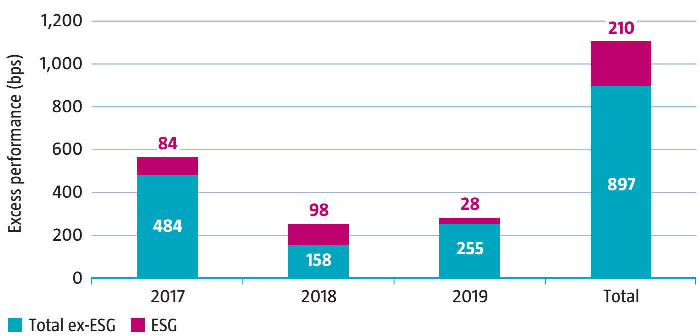


Source: 'Waste to Wealth: Creating Advantage in a Circular Economy', Accenture, 2015; and RobecoSAM

TO MEASURE IS TO KNOW, BUT DO WE KNOW HOW TO MEASURE?

It's easy to drop a lump of sugar into a mug of tea, but once it has dissolved, it is impossible to calculate or to know what exactly the sugar has contributed to the taste. In the same sense, it's difficult to measure the effect of ESG integration on the performance of a fund or portfolio, as the portfolio decisions are based on a completely integrated analysis. Yet that's no reason not to try, thinks Chris Berkouwer, analyst for the Sustainable Global Stars Equity strategy. After diving deep into the performance of the strategy, he discovered that 20% of the outperformance in the past three years could be attributed to sustainability. While the strategy added slightly more than an 11% return to the performance of the MSCI World Index, between 2017 and 2019, 2.1% of this could be attributed to ESG, says Berkouwer.

ESG PERFORMANCE ATTRIBUTION



Source: RobecoSAM

It almost sounds too good to be true. The question, of course, is how Berkouwer measures the contribution of the sugar to the taste of the tea. Berkouwer looks at the ESG elements that have an impact on the target price of every company in the portfolio. These could be positive, zero or even negative. The extent to which ESG affects the target price, combined with the out- or underperformance of the stock, ultimately determines the return attribution. The math is easy. Imagine that company A's stock price is EUR 20 based on a normal financial analysis, but owing to a positive influence of ESG factors, the analysts arrive at a price target of EUR 25. Mathematically, 20% of the stock price, or company value, is then 'ESG related' (EUR 5 divided by EUR 25). If at the end of the year stock A contributes 0.5% to the strategy's outperformance, the ESG contribution to that outperformance would be 0.1%.

Skeptics will argue that this sounds like a back-of-a-beer-mat calculation, and it's true that there isn't any hard scientific evidence yet, but then there are few asset managers that carry out this exercise. "And it is a serious attempt to ascertain the impact of ESG on performance. It also has an impact on how we look at companies, and how we can measure the role of sustainability in the performance of a portfolio," says Berkouwer.

MAKING A DIFFERENCE

REDUCING THE REAL ESTATE FOOTPRINT

Buildings are a major contributor to emissions and solid waste, and a leading user of water and land. Efforts to reduce the extensive footprint of the real estate sector will be critical to making progress in meeting the SDGs linked to these elements.

The team managing the Robeco Sustainable Property Equities strategy is actively using its influence to help lessen this impact, and has had some measurable success in doing so.

As portfolio manager Folmer Pietersma points out, the application of this influence goes well beyond excluding property stocks with a big footprint. He and his colleague Frank Onstwedder engage actively with property companies within the portfolio, in an effort to reduce the negative impact of constructing, running and maintaining properties, which range from industrial, retail and office real estate, to residential, healthcare and hotel property.

“A company’s sustainability score itself is not the sole criterion; the efforts a company is making to improve its ESG profile are very relevant as well. Reducing GHG emissions is our main objective, but energy reduction, water use and waste generation are also important footprint targets,” Pietersma says.

Pietersma and Onstwedder have some quantifiable results for property stocks in the portfolio. “On average, our holdings as at the end of November 2019 that were covered in the Global Real Estate Sustainability Benchmark 2019 survey showed a 5.6% reduction in GHG emissions, or a cut of 350,000 tons of CO_2 emissions from the properties held by the strategy, which is the equivalent of taking 75,000 conventional cars off the road.”

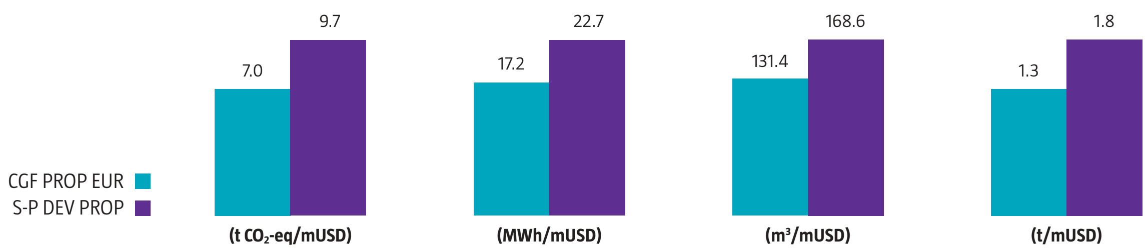
The strategy notched up another achievement by cutting the water use of buildings in the portfolio, which includes the results of steps to use rain water rather than mains water to flush toilets. Water use was cut by 800,000 cubic meters, which is enough to fill 320 Olympic swimming pools.

Cutting carbon footprints in real estate is important, as the sector accounts for nearly 40% of the world’s energy consumption and over 30% of global greenhouse gas emissions. In addition, it accounts for 30% of raw material use, 25% of solid waste, 25% of water use and 12% of land use.

Robeco Sustainable Property Equities targets an environmental footprint that is at least 20% below the sector average. “Its footprint is better than that of the real estate benchmark in terms not only of GHG emissions, but also energy, waste and water,” Pietersma says.

ROBECO SUSTAINABLE PROPERTY EQUITIES' ENVIRONMENTAL IMPACT REPORT

As of 30.11.2019



Impact per mUSD invested	**GHG emissions – Scope 1 & 2**	**Energy consumption**	**Water use**	**Waste generation**
Unit per year	(t CO_2eq/mUSD)	(MWh/mUSD)	(m³/mUSD)	(t/mUSD)
Impact	2.6	5.5	37.2	0.5
Impact (%)	**27%**	**24%**	**22%**	**27%**
Savings/mUSD*	1	2	1	2
Impact total invested: USD 439 m				
Portfolio footprint	3,087	7,569	57,692	586
Benchmark footprint	4,238	9,984	74,015	808
Impact	1,150	2,415	16,323	221
Impact equivalent*	442	623	344	498

*** European average figures per year**

Average carbon dioxide emissions from new passenger cars per year; average 20,000 km and 130 g CO_2-eq/km; in t CO_2-eq (source: www.eea.europa.eu)	2.6
Average electricity consumption per household and year; in MWh (source: www.ec.europa.eu/eurostat)	3.9
Average water consumption per person and year; in m³ (source:www.eea.europa.eu)	47.5
Average waste generation per household and year; in t (source: www.ec.europa.eu/eurostat)	0.4

Source: Robeco, RobecoSAM, 2019

Karen Maas is Professor of Accounting & Sustainability at the Open University of the Netherlands and Academic Director of the Impact Centre Erasmus at Erasmus University Rotterdam. She conducts research in the fields of impact measurement, impact investing and corporate social responsibility.

From 'investing with impact' to 'impact investing'

COLUMN **'Impact investing' is a wonderful concept that can really help to solve social issues. But we must go beyond simply believing others' good intentions. We actually have to measure impact and make it a key focus of our efforts.**

Money plays a crucial role in society: investment drives the action. When the vast majority of capital is allocated to polluting – or primarily profit-driven – businesses, these companies continue to grow and flourish. If more capital were invested in the circular economy, the idea of circularity would form the basis for development.

All investments have a social, economic and environmental impact, be it positive or negative, direct or indirect, intended or unintended. Nevertheless, investors still focus mainly on the financial consequences: returns. The attention paid to social and environmental aspects has, however, increased significantly over the past decade. Investments that factor in ESG considerations have grown strongly in recent years and now account for almost half of total capital invested (USD 30 trillion in 2018, source: Global Sustainable Investment Review, 2019).

From 'do no harm' to 'doing good'

This type of investment involves looking for opportunities that 'do no harm' within the current return and risk-return ratio environment. Investors expect such investments to have less negative social impact. A small subset of these ESG investments is referred to as impact investing and represents a major step forward, as they actively generate a positive and measurable social impact. The focus here is on 'doing good'. However, the Global Impact Investing Network (GIIN) estimates that the current market for impact investing is USD 502 billion, which is less than 0.01% of assets invested worldwide (USD 66.4 trillion AuM in 2019, i.e. 66.4 million times one million, source: IPE, 2019).

This may sound like a semantic distinction, but in essence it concerns investments that also require a different mindset, approach, set of calculations and management. Impact investments are investments with the primary aim of generating positive and measurable effects. Here the pursuit of financial returns is important, but is not the main objective. If no positive impact is expected, no investment will be made. The best financial returns can then be pursued from the opportunities that remain. For ESG investments, the reverse applies. A selection is made based on the expected financial return and investments are sought within that spectrum that would have minimal negative impact.

In order to claim that investments do indeed have a positive social impact, you have to measure their total impact: economic, social and environmental. Social impact can be measured in a number of steps. First, the key indicators need to be identified and selected. This allows you to determine what you want to measure. Impact measurement can then be used to assess the impact of existing investments on the indicators selected. It is important to consider what contribution the investment makes compared to a comparable situation, also known as a counterfactual. As an example, you could compare an impact investment with a traditional investment. The results of this measurement show whether there is a positive impact.

Nowadays, almost all financial parties claim to be involved in impact investing. However, there are few examples in which impact is measured properly and where social impact drives investment. The question is how seriously we can take impact investing at this point in time. The intentions and opportunities are there; now we have to take the next step: to measure and manage, so that we can put our money to work and really help to solve social issues.

MAKING A DIFFERENCE

ENHANCING THE MARKET'S ESG CRED

In addition to its range of sustainable investment products, Robeco also offers customizable solutions. An example is Robeco's ESG Indexing offering, which was initially developed for a Dutch pension fund looking for a specific combination of investment outcomes. This investor wanted an investment solution that provides market-like returns, with a relatively low tracking error compared to the market capitalization-weighted index, while featuring very high sustainability standards.

Robeco's ESG Indexing is a quant-based approach that offers clients a passive-like portfolio that is active with regards only to ESG positioning. It uses active risk budget to allocate towards environmental, social and governance aspects, adding to our already well-established suite of solutions that allocate risk budget towards factor premiums.

In this specific client case, the solution uses a combination of three approaches to sustainability integration: exclusions, integration and impact investing. Exclusions entail avoiding stocks of companies involved in the manufacture or distribution of tobacco products and controversial weapons. Integration involves avoiding companies with the poorest ESG scores. Impact investing involves ensuring the portfolio has a carbon intensity which is 10% lower than the benchmark.

Compared to most standard sustainability indices available in the market, which only consider one dimension of sustainability integration, Robeco's ESG Indexing optimizes the portfolio in order to achieve multiple goals simultaneously. And, contrary to conventional index-based solutions, our ESG Indexing remains flexible and allows for future additional sustainability customization.

USE YOUR ACTIVE RISK BUDGET TO ALLOCATE TOWARDS ESG ASPECTS

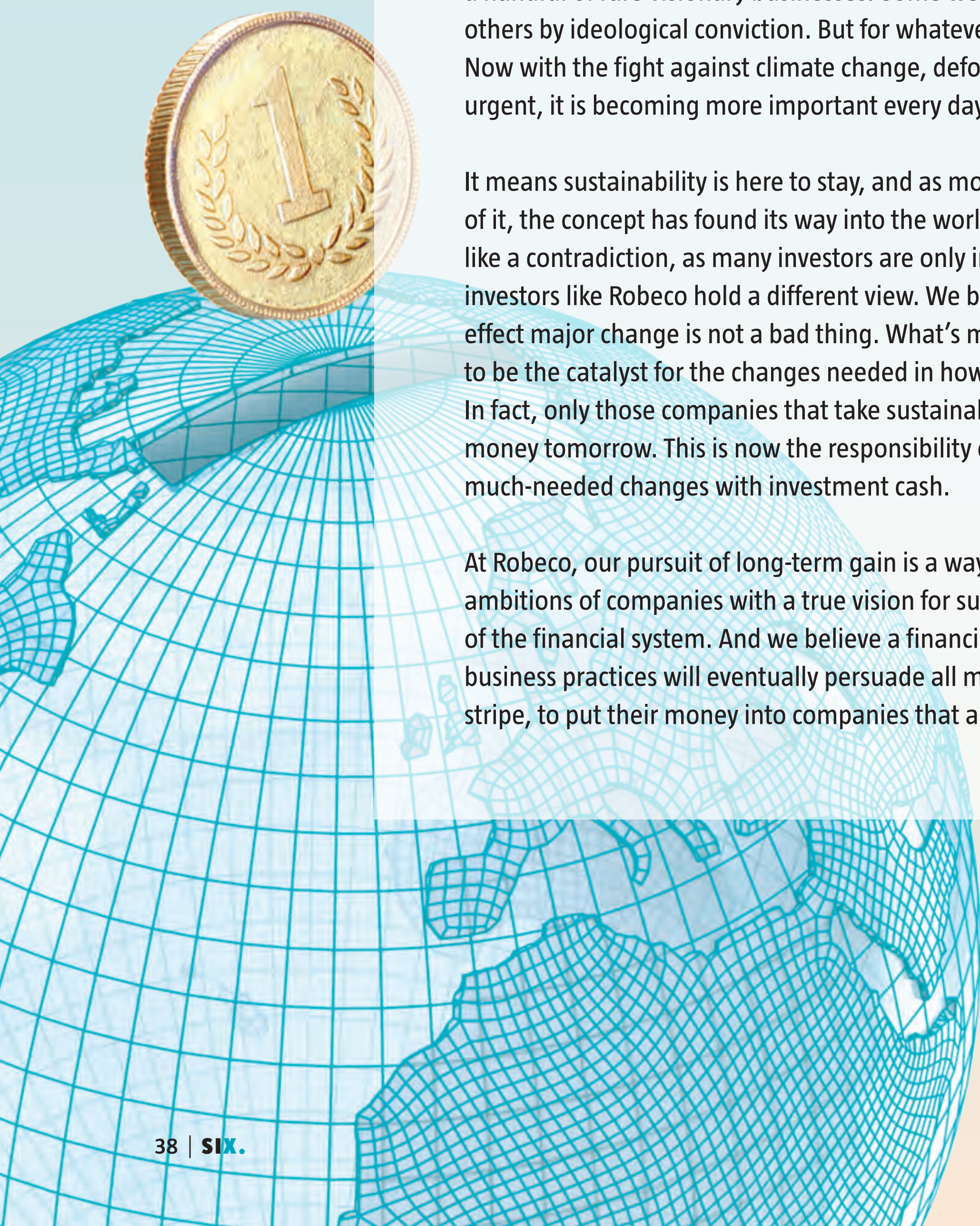
PROFIT

Financial markets and the concept of capitalism have been with us for a long time. Until recently, the profit motive at the heart of the capitalist economy has often been seen as the pursuit of financial gains at the cost of all else. Yet in the right hands, this desire to make money can also be a powerful mechanism to bring about real change.

Sustainability has long been somewhat of a minor concern – the realm of NGOs and a handful of rare visionary businesses. Some were motivated by facts and science, others by ideological conviction. But for whatever reason, these pioneers were right. Now with the fight against climate change, deforestation and waste growing more urgent, it is becoming more important every day.

It means sustainability is here to stay, and as more people recognize the necessity of it, the concept has found its way into the world of investing. For some, this feels like a contradiction, as many investors are only in it to make a fast buck. Long-term investors like Robeco hold a different view. We believe that using the profit motive to effect major change is not a bad thing. What's more, in this day and age, it can prove to be the catalyst for the changes needed in how we consume goods and services. In fact, only those companies that take sustainability seriously today will be making money tomorrow. This is now the responsibility of our industry – to drive those much-needed changes with investment cash.

At Robeco, our pursuit of long-term gain is a way to identify and support the ambitions of companies with a true vision for sustainability. We believe in the power of the financial system. And we believe a financial system that backs sustainable business practices will eventually persuade all market participants, of whatever stripe, to put their money into companies that are helping to build a better planet.



MONEY TALKS

On leadership in SI

"Others can catch up, but experience still counts – and we do have it in spades. There's not really a substitute for experience. We have a track record of 20 years in the products that we offer and about an equal period of time since we acquired SAM, which is a sustainability knowledge center. I think it is the same with everything else we are doing. Sustainable investing is based on research, so we continue to invest very significantly both in applied research, that immediately translates into actions in our portfolios and returns for clients, but also in fundamental research, where we look at what could be the next step in sustainability (...). We fully believe that if you focus on sustainability, you're going to be a better asset manager."

On BlackRock going full-throttle on sustainability

"BlackRock has a tendency to make very bold statements, and this is one of them. We can only be happy that the largest asset manager in the world is becoming serious about ESG and climate change in particular (...). At Robeco, we have put these topics at the center of everything that we do for 20 years now. It is our firm belief that if you understand ESG factors, over the long run you are going to make better risk-adjusted returns. The challenge for BlackRock is that a very large part – over 50% – of their earnings is generated through passive investments. To move passive investment to include ESG is quite a significant task. Unless they change all of the underlying indices, this is not going to be easy."

On sustainable investing definitions

"We still think of sustainability in the classic definition of making sure that we meet the needs of the present generation without hampering the needs of future generations. The 17 SDG goals are a much better reflection of sustainability than climate [considerations] only or ESG."

SOUNDBITES

GILBERT VAN HASSEL

CEO ROBECO

* Source: Podcast: It's time asset managers make money talk, 22-01-20

On capitalism saving the planet

"The answer needs to be nuanced here. Very clearly, regulatory push helps; defining a common taxonomy [in particular] would help us tremendously. Then you can start measuring it, and if you can measure it, you can manage it and start making progress. But I don't think it's the most important. You clearly see there's a (...) groundswell of climate actions everywhere in the world, also social unrest (...). Younger people are forcing us to take it very seriously. Lastly I would stress that, from our perspective, we are totally convinced and it is totally in our DNA that this is not a luxury, but a need for us to understand in order to make better investment decisions. How can capital help? Asset managers manage a lot of assets. Asset owners have tremendous pools of money. Money speaks. If we start investing this money more towards the longer term and towards sustainable solutions, things can go very, very quickly."

ENGAGING to make a difference

Engagement can improve companies' sustainability and is an important part of impact investing. Robeco's Active Ownership team selects new engagement themes every year in close consultation with clients and investment teams.

With the five new topics added for 2020, the team now has 23 engagement themes in scope, covering areas as diverse as the social impact of artificial intelligence and the consequences of unsustainable palm oil (see page 48-53). Each engagement usually lasts for three years.

The five new themes for 2020 are:

COMBATTING biodiversity loss

Biodiversity loss is one of the major global ecological threats expected to have an impact on society in the coming decades. Investors are exposed to biodiversity loss predominantly through land use change, which results from deforestation through clearing land for agricultural production.

We want companies that produce soy, cocoa or palm oil, or companies that manufacture food, to conduct a biodiversity impact assessment of their operations and of their supply chains. We also want them to develop plans to achieve zero net deforestation by 2023.

It's difficult to pinpoint what the impact of a specific company is on biodiversity. In the short term, fewer bees or species of birds isn't a big issue for individual companies. But on a global scale, the extinction of species will have huge knock-on effects, and will have a large impact on the ability of companies to produce food at the current scale of production.

It's a very challenging topic, so we are collaborating with a variety of stakeholders such as universities, NGOs and the DNB Working Group on Biodiversity to gain input on how to approach this issue from an investor perspective.

IMPROVING mining safety

Mining companies have seen a number of fatal accidents involving tailings dams – an embankment used to store the byproducts of mining operations. Some 248 people were killed when a Brazilian tailings dam collapsed in January 2019.

We believe that existing guidelines are insufficient to prevent failures from reoccurring, as seen by the fact that some companies have had recurring incidents. Robeco is an active member of the Investor Mining and Tailings Safety Initiative, a global engagement program co-led by the Church of England and the Swedish Council of Ethics. Engagement specialist Sylvia van Waveren sits on its steering committee.

So far, this initiative has contacted over 600 companies requesting that they disclose their tailings dam risks. But our engagement will be broader than the focus of the joint initiative. We will also look at water management practices, which are highly relevant for mining companies, as we want to align water management with best practices.

PURSUING
better governance in emerging markets

Governance standards in emerging markets are often different from those in developed markets. Those differences tend not to be beneficial for institutional minority shareholders, so if we improve the corporate governance of such companies, then we can also notably improve the position of institutional investors.

The main focus for these engagements will be on markets such as Brazil, South Korea and China. We will also look at opportunities for policy engagement in collaboration with local investor initiatives. These include the Asian Corporate Governance Association (ACGA) and the Associação de Investidores no Mercado de Capitais (AMEC) in Brazil.

Hong Kong-based engagement specialist Ronnie Lim serves as an ACGA council member, while Rotterdam-based emerging markets portfolio manager Daniela da Costa-Bulthuis is an AMEC board member. So, we literally have a seat at the table to be able to make an impact.

DECARBONIZING
companies and portfolios

The need to decarbonize companies – and thereby portfolios – becomes more urgent as evidence of global warming mounts with every passing year. The wildfires in Australia and the fact that the 2010s were the warmest decade on record bear testimony to how rising carbon dioxide levels are causing potentially irreversible damage to the planet.

The Paris Agreement aims to restrict global warming to 1.5 degrees Celsius above pre-industrial levels by 2100. To achieve this, the world needs to halve its carbon footprint by 2030 and become carbon neutral by 2050. And that means companies and investors need to step up to the plate.

The main aim of this engagement will be on decarbonizing companies, not only focusing on the high polluters in absolute terms, but also on the high polluters in portfolios, as measured by their weighted average carbon intensity.

SEEKING
sensible remuneration

Making sure that executive pay reflects company performance – both financial and in terms of ESG – is a hot topic for investors following new regulation. The EU's Shareholder Rights Directive II requires companies to have their remuneration policies approved by investors in advance and to improve their practices.

It is therefore the job of investors to question – and not necessarily 'rubber stamp' – the remuneration policies of their investee companies and make sure they are aligned with the interests of stakeholders. Remuneration should also conform to existing pay practices, with a focus on simplicity.

Looking at remuneration is of course not new, as we already vote at shareholder meetings on remuneration policies and reports – sometimes voting against pay packages that were thought to be excessive when related to performance. Making it an engagement theme does, however, give it extra impetus in 2020.

15 YEARS OF SUCCESS THROUGH ACTIVE ENGAGEMENT

2004
Robeco starts proxy voting for 70% of investments in its equity funds – the first Dutch asset manager to do so

2005
Robeco launches its engagement service

2006
Robeco becomes one of the first signatories to the United Nations-supported Principles for Responsible Investment (PRI), which was founded in 2006, and acquires RobecoSAM

2007
We assess the environmental and carbon impact of around 80% of our listed equity portfolios, with the help of Trucost

2008
We co-organize Stemmend Nederland, a collaborative initiative aimed at creating a well-functioning voting chain

2009
Robeco actively supports collaborative engagements such as the Carbon Disclosure Project (CDP), the Forst Footprint Disclosure Initiative and the CEO Water Mandate

2010
Robeco joins the Asian Corporate Governance Association (ACGA) as an active member

2011
Following publications from the United Nations Environment Program, Robeco engages with energy companies on oil spills in Nigeria

2012
We complete a collaborative-engagement CDP project, in which we engaged with 44 companies on behalf of a large group of investors, with a 46% success rate. With the support from companies with which we engaged, the collaboration results in investors receiving pertinent information in a consistent way

2013
Following the Rana Plaza disaster in Bangladesh in which more than 1,000 workers died, we begin engagement on health and safety in the clothing industry

2014
Inspired by the new Ranking Digital Rights Index, we begin engagement on data privacy. We also commence successful engagements on food and health, with a focus on tackling obesity and irresponsible marketing

2015

We become a Tier 1-rated signatory of the UK Stewardship Code

2016

Significant progress is seen in reporting by energy companies on deep water drilling, after three years of engagement following the Deepwater Horizon accident in the Gulf of Mexico

2017

Shareholder proposals are filed to reduce antibiotics use in McDonalds' supply chain, leading to corporate action

2018

A stunning success is achieved when Shell agrees to set short-term targets for carbon reduction and link executive pay to these targets. It follows engagement jointly led by Robeco and the Church of England on behalf of Climate Action 100+

2019

Robeco publishes a unique position paper on palm oil, setting strict standards for the industry, and becomes the first investor to join the Roundtable on Sustainable Palm Oil

WHY EXCLUSIONS ALONE DON'T PROMOTE SUSTAINABILITY

Exclusions may be an obvious way for investors to reflect their values. But it's doubtful whether they result in sustainability improvements. For investors wanting to make a difference, exclusions can be considered nothing more than a small first step.

The arguments for and against exclusions are analyzed in a recent paper by Robeco's head of quantitative research, David Blitz, and Laurens Swinkels, senior researcher and an assistant professor of finance at Erasmus University, published in the Journal of Portfolio Management.

"Many believe that investors can contribute to a more sustainable world by divesting from firms with the worst sustainability profiles," the authors say in the article, which is entitled 'Is Exclusion Effective?'. "But because exclusion is effectively a transfer of ownership from concerned to less-concerned investors, it is anything but obvious how this is supposed to lead to changes for the better in society."

They argue that investors are likely to achieve more by exerting influence as an active shareholder.

What's more, the authors explain that most of the arguments usually raised to support exclusions don't hold. Exclusions do not necessarily increase the cost of capital of firms and they do not cut them off from capital markets. Nor do they consistently lead to better investment results. Finally, far from the original idea of sending a powerful message, exclusions are often perceived as mere greenwashing.

MONEY TALKS

A DAY IN THE LIFE OF
AN ACTIVE OWNERSHIP SPECIALIST

Kenny Robertson is an active ownership specialist at Robeco, where he has worked since 2015. Originally from Scotland, he studied at the University of St Andrews and joined Robeco as a corporate governance analyst. This is what his typical day looks like.

7:00AM Up and out. I live in an old house in the west of Rotterdam, which is a very lively and multicultural part of town, but still only a short walk to work every morning. I know a lot of people who are jealous of my commute, given that it's only a 10-minute walk along the Nieuwe Binnenweg, one of my favorite streets in the city. Most Dutch colleagues cycle, of course.

Typically, I try to start my day early, as I like the quiet of the office in the early morning, it is free of meetings, and I can focus on my inbox. But first – coffee. Only after that can my work day begin.

8:00AM My job is to handle some of our client-facing activities on sustainable investing in general, and active ownership in particular. My role particularly involves gathering information from many different colleagues in many different teams, so that I can best answer clients' questions. Robeco is highly collegiate, and input is welcome from everyone – we could hardly engage with companies if we couldn't engage with each other. So, getting things done means spending a lot of time talking to colleagues from the active ownership team about the issues of the day, and also from other departments and country offices. I also work closely with our marketing and sales teams.

The diversity of the job is one of the things I most enjoy. Just like our clients, both the active ownership team and Robeco as a whole are very diverse in terms of background and nationality (there are seven different nationalities in my team alone). It's another thing I really like about this company, and this job.

9:00AM Each week, I have frequent contacts with many of our clients, both here in the Netherlands and internationally. One recurring topic is the huge amount of new regulation around SI in the last couple of years, not least the new EU Sustainable Finance Action Plan and the EU's new shareholder rights rules. This has led to a large rise in the number of questions we receive, and the depth of knowledge required to answer these has really risen massively in recent years. If I don't know the answer, there is someone here who does.

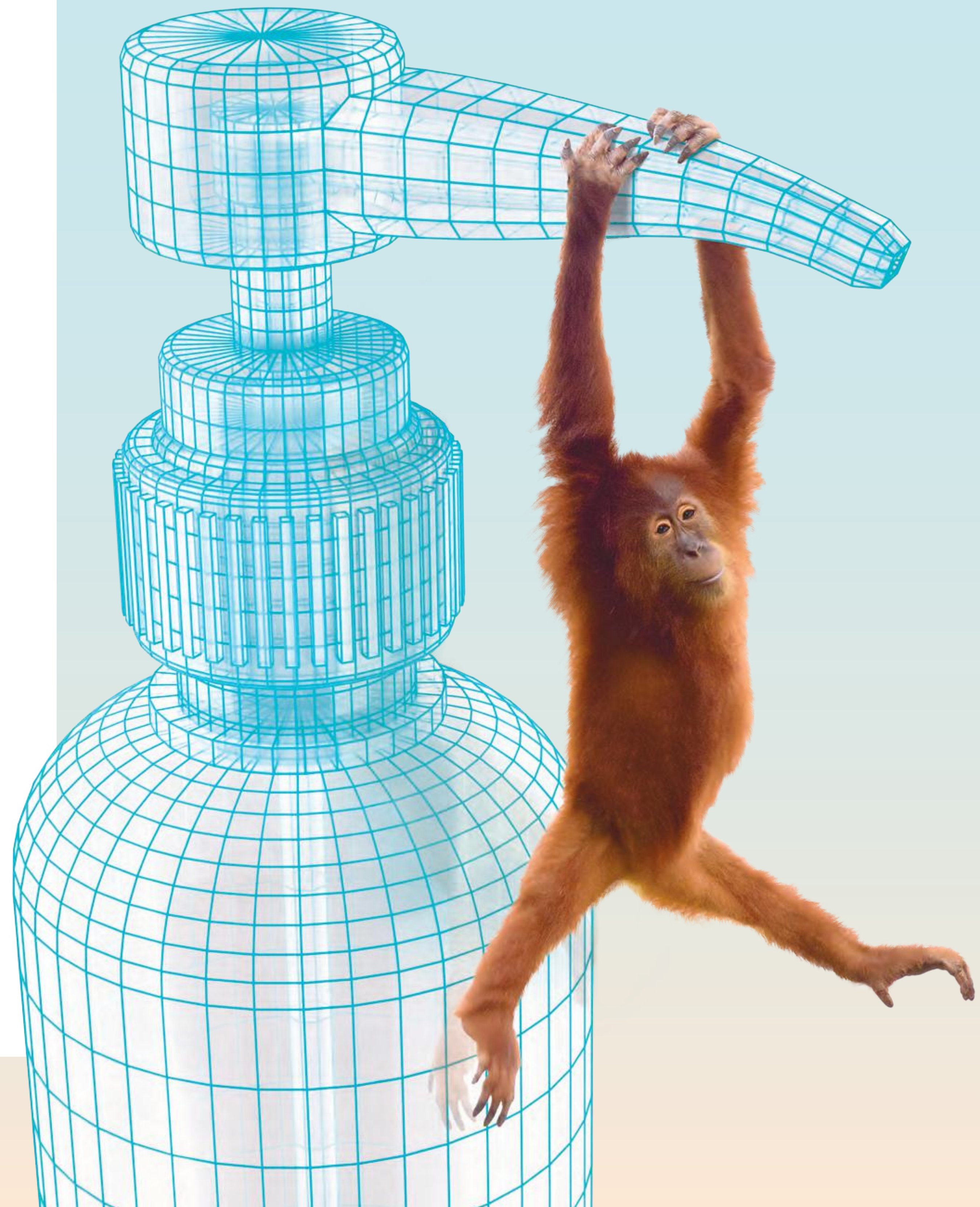
10:00AM The day gets going with the nitty gritty of engagement – people often ask: how do we engage exactly? It's done through multiple conference calls, face-to-face meetings or other correspondence with the companies involved. The same goes for talking to clients when we discuss the outcome of the engagement or voting work that we do on their behalf. A lot of this time this is done via conference calls – we do try to practice what we preach and not use fossil fuels on unnecessary traveling when a call would suffice.

11:45AM The lunch routine for the Active Ownership team combines the timekeeping of a Swiss clock with the ruthless efficiency of a Japanese railway guard. We all move down to the canteen strictly at 11:45 each day; no deviations from this schedule are accepted, and dissent is always crushed. Coming from outside of the Netherlands, this kind of lunch ritual took some time to get used to. But then this kind of discipline is how the Dutch have reversed nature and stopped the country from flooding.

6:00PM When the work day is over, it's again only a short walk back to the house. My girlfriend Anna is half-French and half-Croatian, so food is a big part of each evening once I get home. She's a great cook herself, but most of the time I do the cooking. Because of this, I get full control over the set-up of the kitchen (functional), which does not apply to the rest of the house. We typically eat much later in the evening as well, so that leaves plenty of time when I get home to rattle around the kitchen. After dinner, there's some time left to call my family back in Glasgow (proud hosts of the COP 26) or watch some TV.

3:00PM Time now to look in on one of the other parts of my role: making sure we get the right data to our clients in the most efficient way. Being more on the client-facing side, I get a good picture of the questions we are commonly asked around active ownership. I'm therefore involved in a lot of IT and reporting-related projects to make sure our offering in this area remains cutting edge. As the importance of sustainability continues to rise for our clients, it is important to ensure we stay ahead of the curve.

12:30PM Whilst most of my work is client facing, I'm also still involved in some of the content, particularly around cybersecurity. I was amazed to discover that the biggest criminal activity in the world today is not drugs or armed violence, but crimes involving computers (see page 6) – USD 6 trillion a year. The engagement cases I am responsible for in the team are those around improving cybersecurity risk management at payments and IT companies in our clients' portfolios – a hugely interesting and material topic to discuss.



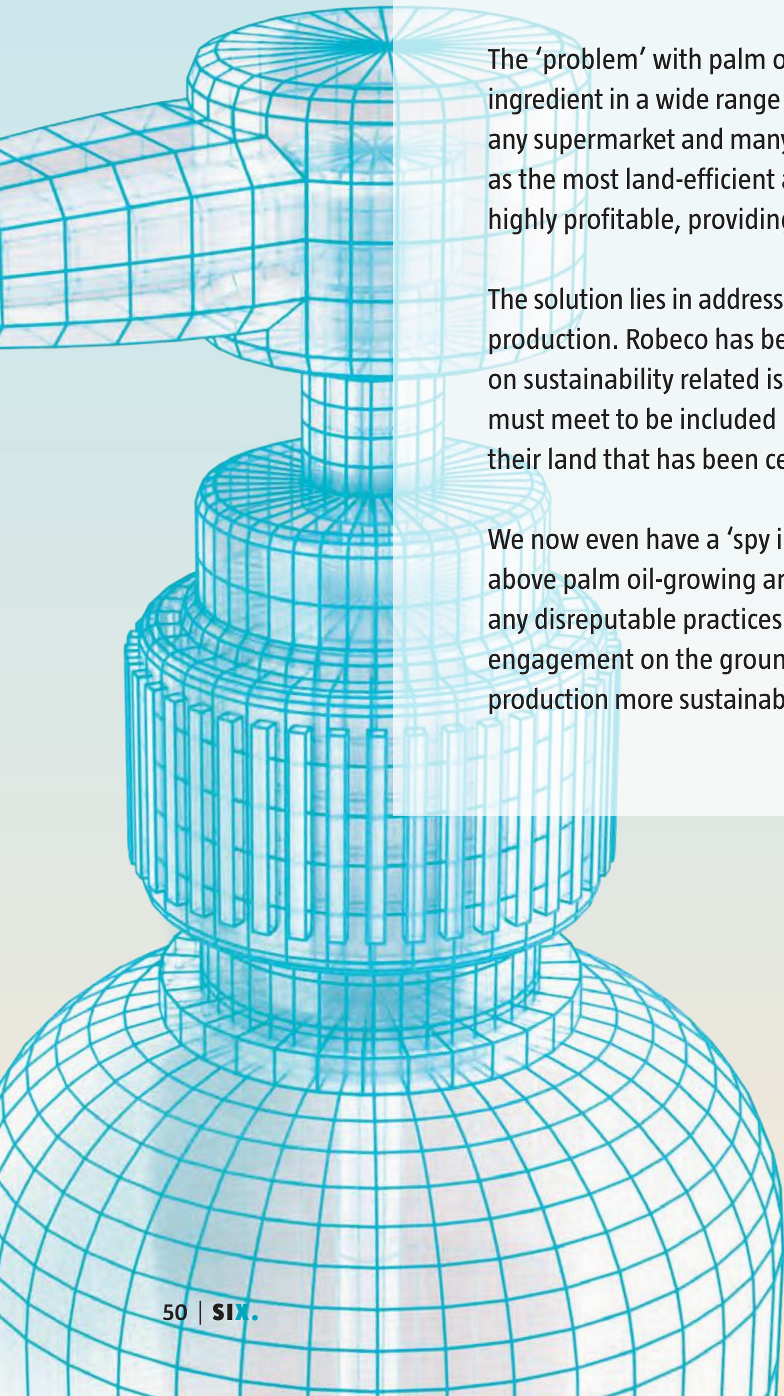
PALM OIL

It's an image that has haunted the world – a distressed orangutan forced out of his forest home by palm oil developers. It symbolizes how consumption-driven human behavior is damaging wildlife and fragile ecosystems, while deforestation is contributing to global warming. But there is a sustainable way forward.

The 'problem' with palm oil is that it is so fantastically useful. It is an essential ingredient in a wide range of consumer goods, from chocolate to shampoo. Go into any supermarket and many of the products you see will contain palm oil. Furthermore, as the most land-efficient and versatile vegetable oil, its cultivation as a cash crop is highly profitable, providing much-needed income in emerging economies.

The solution lies in addressing the flipside by using investor power to stop unsustainable production. Robeco has been engaging with palm oil producers, traders and buyers on sustainability related issues since 2010. We lay down standards that companies must meet to be included in our investment universe, based on the proportion of their land that has been certified by the Roundtable on Sustainable Palm Oil.

We now even have a 'spy in the sky' to monitor production. A satellite that orbits above palm oil-growing areas can spot when land use is changed and identify any disreputable practices or deforestation. By using this combined approach of engagement on the ground and technology in the sky, we can work to make palm oil production more sustainable and allow our friends the orangutans to keep their homes.



Seeing is believing in active ownership. How can you tell if a company is actually doing what you wanted it to, to improve its sustainability?

SPY IN THE SKY

This can be extra difficult when the issue is palm oil production spread over vast areas of land in emerging markets. Robeco is in the midst of a three-year engagement program with the palm oil industry to stop deforestation and improve standards in Malaysia and Indonesia.

Checking up on investee companies is logistically difficult. Unless you have boots on the ground to cover thousands of hectares of plantations, companies have significant leeway to ignore the requests of their shareholders and carry on regardless.

BEFORE AND AFTER

However, help has literally come as a sign from above, thanks to an exclusive collaboration with the Dutch satellite data company Satelligence. This spy in the sky can spot signs of land clearance from orbit, using high-quality pictures to allow 'before and after' comparisons to be made continuously.

The imagery comes from satellites operated by the European Space Agency (ESA), the Japanese Aerospace Exploration Agency and NASA, orbiting 700 km above South-East Asia, West Africa and Central and South America.

One of these satellites, the ESA's Sentinel-1 launched in 2014 as part of the Copernicus scientific program, is so powerful it can pinpoint and precisely 'photograph' pieces of land five meters in diameter through the clouds. Aside from deforestation, it can detect oil spills, melting sea ice and flooding as part of the EU's Earth Monitoring program.program. All recent changes are depicted in red (as in the sample photo).

CATCHING THE CULPRITS

It has already detected one breach at a plantation owner. The evidence from the satellite imagery shows forest cover before 1 January 2019 and the deforestation of 25 hectares of forest that took place after 1 September 2019.

"Many companies are struggling to show progress of commitment to ending commodity-driven deforestation in their supply chains," says Niels Wielaard, Director of Satelligence.

"Deforestation and other climate-related risks could also pose a major threat to investors' portfolios. So for financial institutions, it is crucial to be at the forefront of making impact measurable and visible."

PINPOINT PRECISION

This is a problem on a massive scale. According to Indonesian government statistics, deforestation due to clearance for palm oil plantations has so far amounted to 29,000 square kilometers, or 40% of all agricultural land. Indonesia increased its palm oil production by 91% between 1989 and 2013, of which 53% was made possible by the deforestation of previously primary forest areas.

The satellites can target different crops subject to sustainability issues, including cocoa, soy and timber, as well as palm oil. Artificial intelligence is used to enhance the data analysis and keep track of quickly moving events. Continuously updated, it provides a real-time commodity map of the world.

The data can be used to engage with plantation owners, traders, intermediaries and other players in the supply chain, as well as to alert authorities of any criminal activity. The methods were developed in close cooperation with scientists at the Netherlands' Wageningen University, which specializes in life sciences and natural resources.

A VITAL COMMODITY

Improving sustainability in palm oil is crucial, as excluding it is not viable. Unlike 'sin stocks' such as alcohol, which can be avoided, palm oil is an essential ingredient in many consumer goods, from chocolates to shampoo. And as the most land-efficient and versatile vegetable oil, its cultivation as a cash crop is highly profitable. This has led to many plantation owners chasing short-term profits by developing land in unsustainable ways.

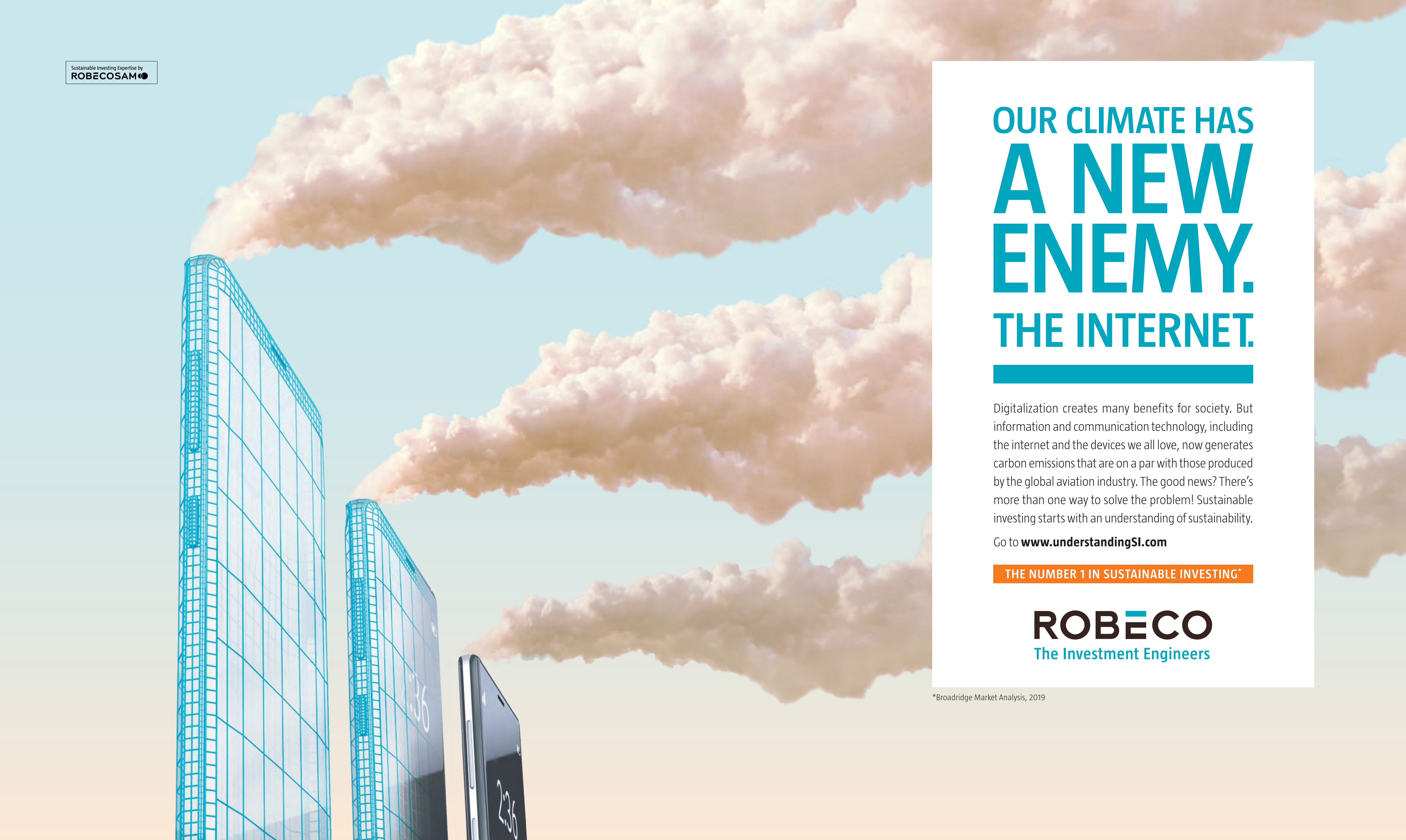
To combat this, a key benchmark in Robeco's engagement program is increasing the amount of land under cultivation that has been certified by the Roundtable on Sustainable Palm Oil (RSPO), a not-for-profit group that Robeco joined in January 2019. If a company has less than 20% of its land RSPO certified, then it will be excluded from the investable universe.

Certified land of between 20% and 80% means the company is eligible for enhanced engagement to raise its investibility. Any company which has between 80% and 100% of its land RSPO certified can be included in the Robeco SI Focused range of funds. This makes them more attractive investments – so it's in their own interests to become more sustainable.

0-20%	Exclusion
20-80%	Enhanced engagement
80-100%	SI Focused range

“IT CAN DETECT DEFORESTATION, OIL SPILLS AND MELTING SEA ICE”

A sample image taken from Satelligence.com.
The red areas depict recent deforestation.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Digitalization creates many benefits for society. But information and communication technology, including the internet and the devices we all love, now generates carbon emissions that are on a par with those produced by the global aviation industry. The good news? There's more than one way to solve the problem! Sustainable investing starts with an understanding of sustainability.
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*Broadridge Market Analysis, 2019

CO_2

You're surfing the net on your computer, checking your smartphone or watching catch-up TV, thinking: "At least this is environmentally friendly." After all, you're not driving a polluting car, burning fuel to cook dinner or flying to your holiday destination. Right? Or, wrong?

Wrong. The internet and its infrastructure now constitute one of the biggest offenders when it comes to carbon footprint. Its sheer growth over the past two decades means the total CO_2 emissions generated by the production of electricity needed to power electronic devices and transmit data is equivalent to the global airline industry.

More data has been produced in the last two years than in the previous 40. This data forms part of everyday life, from the information on websites to email traffic, smartphone apps and online banking transactions. The data servers and cloud computers needed to store all this use power equivalent to what entire countries would use to heat homes in one year.

And then there are electronic services like cryptocurrencies, which spew out billions of tons of CO_2. The total energy consumption of the entire bitcoin network for example, including the 'mining' cost of making digital coins, was calculated to be higher than the annual electricity consumption of Romania.

So, what do we do about this? Internet use is rising, not falling. Investment in digital trends such as fintech can eventually lower carbon footprints by facilitating the switch to less energy-intensive services. Recycling can keep electronic devices in the market for longer, avoiding the need to make new ones.

But the main answer lies in switching to energy sources that can power the internet (and everything else) without producing emissions. That's why Robeco has been at the forefront of engaging with fossil fuel providers and users to change business models and integrate renewables.

Once the energy transition has happened, you won't have to think before you click. Sustainability is the solution, online and off.

BUIILDING
A FUTURE

THINK YOU KNOW HOW TO CUT YOUR CARBON FOOTPRINT? THINK AGAIN

Creating sustainable investments is not as simple as excluding the usual suspects – companies operating in controversial sectors, such as tobacco or weapons manufacture, or in the dirty, gas-guzzling, smokestack industries. For starters, it's anything but obvious how exclusion-based approaches can lead to changes for the better in society.

What is more, assessing and comparing the sustainability of companies is often more complex than meets the eye. For instance, carbon emissions come from all corners of the economy, and it would be a mistake to base stock selection and portfolio construction on simple assumptions of what constitutes clean activity.

Prime, seemingly harmless examples of this are our daily internet activity, the maintenance of the world's data storage infrastructure and round-the-clock bitcoin mining. All of which consume vast quantities of energy and therefore have a huge impact on the environment.

The energy needed to send one email contributes four grams of CO_2 to global warming, according to a seminal book, *How Bad are Bananas? The Carbon Footprint of Everything*.[1] Add a long attachment to the email and this soon rises to 50 g. And, believe it or not, the average inbox adds 136 kg of CO_2 emissions a year, the equivalent of driving 300 kilometers in a conventional car.

More generally, the use and storage of data is similarly energy heavy: 33 trillion gigabytes of data was generated in 2018, of which only about 6% is in active use. Data centers now consume around 2% of the world's electricity and have a carbon footprint equivalent to the entire airline industry. At the current rate of growth, data infrastructure could account for 8% of global energy use by 2030 – almost the same level as the road transport sector.

However, this does not take into account the fact that more of the world's energy is coming from renewable energy, whose carbon footprint is virtually zero, and that the servers used for data storage are becoming more efficient. This means figures can be overestimated, with many being disputed.

For example, estimates of how much CO_2 is released from the electricity needed to watch 30 minutes of Netflix ranges from 1.6 kg – equivalent to driving a car for six kilometers – to just 20 g, if the energy was renewably sourced. Facing pressure to reduce their carbon footprints, data and streaming companies are now buying entire wind farms to source their power more sustainably.[2]

1. Berners-Lee, M., 2010. "How Bad are Bananas? The Carbon Footprint of Everything."

2. Bloomberg, citing 'The Digitization of the World', DataAge2025, November 2018

Rigor that goes beyond the obvious

Robeco's approach to sustainable investing entails a rigorous assessment of the sustainability credentials of all sectors – not only the most blatantly unethical or the dark-brown ones.

Our quantitative equity strategies, for example, consider a wide range of sustainability criteria, throughout the investment process. This holistic approach builds on decades of research and experience, and differentiates our offering from some of the more generic ESG solutions, which typically settle for basic exclusion lists or focus only on one aspect of sustainable investing.

Our approach starts with Robeco's standard exclusions list and thus elimination of companies active in controversial sectors or engaged in controversial business practices, such as unsustainable palm oil, nuclear weapons or tobacco. Our 'Sustainability Focused' strategies go a step further and apply a more extensive values-based exclusions list that includes firearms or thermal coal, for example.

Exclusions are a first step only

But exclusions are just a first step and sustainability criteria are also an integral part of our stock selection process. At this stage, our aim is to identify firms with favorable characteristics in terms of both return and sustainability. The idea is to make it more likely for stocks with good sustainability characteristics to end up in portfolios.

The sustainability profile of a company is captured by RobecoSAM's Smart ESG scores. These are based on corporate documents, media and stakeholder analysis, as well as S&P Global's Corporate Sustainability Assessment, an annual survey among more than 4,700 firms. Firms receive a score of between 0 (low) and 100 (high) based on the extent to which they meet environmental, social and corporate governance criteria.

In other words, we continuously screen and monitor the sustainability profile of thousands of companies worldwide. This enables us to improve the sustainability profile of our portfolios in a rigorous, measurable and precise way, while simultaneously capturing the majority of the exposure to the return factors we target with our quantitative models.

As a result, we can ensure that all our quant equity portfolios have better Smart ESG scores than their benchmark. Investors wanting to go one step further can select our advanced approach, available in Robeco's Sustainability Focused equity strategies. These deliver a portfolio Smart ESG score that is at least 20% better than the benchmark and a reduction of the environmental footprint for greenhouse gas emissions, water use, waste generation and energy consumption of at least 20% compared to the benchmark.

Engaging on sustainability

Another pillar of our approach to sustainable investing, which also sets Robeco's offering apart, is engagement and voting. These are critical elements for a successful sustainable investing strategy with impact. We target a relevant subset of companies globally in our equity and credit portfolios for a constructive dialogue on ESG aspects, guided by specific and measurable objectives.

We understand that there is no scope in sustainable investing for simple assumptions, platitudes and rubber stamping. And, given our integrated approach of knowledge sharing, leveraging financial expertise and applying our sustainable investing know-how, we are in a unique position within the asset management field to deliver truly sustainable portfolios.

MY SDG

The 17 SDGs cover a wide range of topics, from poverty and education to decent work and sustainable cities. Members of the Robeco Active Ownership team give a personal take on eight of them.

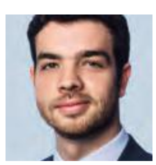
SDG 2 ZERO HUNGER

As many as 810 million people live in hunger today. This grim reality presents an enormous challenge: to end hunger by 2030, companies in the food and agriculture supply chain would need to design products to help smallholder farmers in developing countries produce enough food to feed their families and communities. Collaboration with NGOs and governments is key in delivering these solutions to those farmers who most need them.

Peter van der Werf, *engagement specialist*

SDG 4 QUALITY EDUCATION

Inclusive, high-quality education is the enabler for a more aware society. I am convinced that everyone aspires to be a lifelong learner, but the tools – such as qualified teachers and effective technology – need to be accessible for all. Such access is essential in fostering real progress on the challenges we otherwise risk passing down to future generations.



Cedric Hille, *active ownership analyst*

SDG 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

SDG 9 is about going beyond compromise. In my opinion, that is also the overall theme of the SDG framework: to reach these 17 ambitious goals, we would need to think in new ways and act decisively. In particular, I would argue that, instead of pursuing a sustainable future at the expense of economic development, both can be achieved in tandem. Doing so will require investments in resilient infrastructure, innovative solutions and adaptive industries.

Robert Dykstra, *active ownership analyst*

SDG 17 PARTNERSHIPS FOR THE GOALS

Partnership is the key to success in reaching the Sustainable Development Goals. In my work as engagement specialist focusing on the energy sector, I am acutely aware of the importance of encouraging the formation of climate partnerships between company boards and investors. Climate partnerships are needed if climate change targets are to be met. Robeco's many years of engagement with the energy sector have already delivered some notable results, and I look forward to being part of the process of deepening these partnerships.

Sylvia van Waveren, *engagement specialist*

SDG 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

As head of Robeco's Active Ownership team, I feel strongly about the responsibility I have through our corporate engagement programs. One of my main motivators is the desire to see humanity halting its 'ecological overspending' – our tendency since the 1970s to consume resources in excess of the earth's capacity to regenerate those resources. The fact that this overspending is accelerating, combined with a growing world population – likely to reach 10 billion in 2050 – means it is essential that we move towards more responsible consumption and production. This is a huge challenge.

Carola van Lamoen,
head of Active Ownership

SDG 16 PEACE, JUSTICE AND STRONG INSTITUTIONS

'Peace, Justice and Strong Institutions' has the most personal significance for me, given its relevance to the markets I cover, namely the Asia-Pacific region. My view is that improving governance through ensuring the transparent and accountable behavior of our portfolio companies is the most legitimate and effective exercise of our influence as investors.

Ronnie Lim,
senior engagement specialist

SDG 10 REDUCED INEQUALITIES

Inequality constitutes a major obstacle to economic and social development. My view is that power and wealth inequalities turn into unequal opportunities, preventing societies from unleashing their full potential in an inclusive manner. This can undermine both social justice and respect for human rights, challenging the current social compact.

Laura Bosch,
engagement analyst

SDG 13 CLIMATE ACTION

Achieving net-zero carbon emissions by mid-century is the biggest challenge to our planet, and therefore to the global economy and to our contemporary lifestyle. In my role as engagement specialist in Robeco's Active Ownership team, I see the enormous influence that the financial industry has in encouraging high-emitting industries to transition towards low-carbon business models, and in helping to finance this transition. Active Ownership is an essential tool for investors to better understand their exposure to climate-related risks and promote swift corporate action. I am pleased to be playing a part in contributing to this Sustainable Development Goal.

Cristina Cedillo, *engagement specialist*

TACKLING THE TAKE-MAKE-WASTE ECONOMY

Interview with Robert-Jan van Ogtrop

Keizersgracht, in the heart of Amsterdam. The bastion of old money, where four hundred years later the rich history of the Dutch East India Company still adorns the walls of centuries-old canalside houses. The canal belt is lined with glistening luxury sports cars, all parked along the too narrow streets like showpieces of the *linear economy*. And this is precisely where we meet Robert-Jan van Ogtrop, an advocate of the *circular economy*.

In a short space of time, the circular economy has become a household name, with many faces and labels. These include regenerative economy, donut economy and blue economy. But a word of warning: not everything referred to as circular economy is actually worthy of the name. Greenwashing is on the rise here, too, says Van Ogtrop. The circular economy according to Van Ogtrop is fully sustainable and linked to how our planet works. "We live on a planet defined by circularity – even the shape itself – with day and night, the four seasons, and so on. Before we lived on Earth, waste – in the sense of rubbish – didn't exist. There is no waste in nature; nothing is discarded. Nature works so cleverly that everything which is used is reused."

Van Ogtrop stresses this point and not without reason. The almost nonchalantly expressed statement 'waste doesn't exist' goes to the very heart of his argument – this notion forms the foundation of the circular economy. In our modern times – in which consumerism reigns supreme and capitalism is groaning under the weight of its own excesses (such as climate change, smog in large cities, waste mountains and plastic soup) – his message is that waste doesn't exist. Not that there isn't any rubbish, but that we shouldn't see it as waste.

Planetary boundaries

We created the linear economy during the Industrial Revolution, says Van Ogtrop. "Fantastic things have happened since then, let that be clear. But if you create a linear economy on a planet that works in a circular way, sooner or later you reach your own boundaries. We've all created the take-make-waste economy, constantly extracting raw materials from the ground. We feed them into a linear growth model, acting as though they are an endless resource – which, by definition, is not the case. And now we're seeing that in the coming decades, a number of vital resources will be depleted if we continue as we are. What is more, owing in part to the growth of the global population, the linear economy is now creating gigantic mountains of trash, which we are almost literally choking on. We're reaching all the planetary boundaries." →

Robert-Jan van Ogtrop
Founder of Circle Economy
Board Chairman of African Parks

"WE TOO EASILY TURN A BLIND EYE TO WHAT'S HAPPENING AROUND US. ME INCLUDED – I'M NO SAINT, EITHER"

Recycling is the last option

A conversation with Van Ogtrop is mainly a question of listening carefully. Every question leads to a passionate mini lecture. But don't think that he's a moral crusader, or an environmental activist. The former CEO of Bols and subsequently Remy Cointreau (and later partner at CVC) is not against capitalism. But he does note that 'we' have a problem and that most people have buried their heads in the sand, while a small portion are attempting – with doom scenarios – to get things moving. Van Ogtrop's approach is a positive one instead. "The good news is that there is a holistic, positive and inspiring solution." Which is? "It is important to convert the current economic model in such a way that we start working circularly again. We decide to agree that waste just doesn't exist."

It sounds easy, but how do you avoid waste in a world of mass production, mass consumption and disposable products? Again, the answer is, in theory, simple. "You can produce whatever you want; there is complete freedom – a free market economy – but when a product that you have produced comes to the end of its life cycle, it's your responsibility as a producer to ensure that it doesn't end up on the mountain of waste. This can be achieved through the use of circular models, or by using the components as input for the next cycle." If you take this idea to the extreme, says Van Ogtrop, you don't have any more waste and you don't have to continuously mine new raw materials. So you prevent planet Earth from becoming depleted. But the circular economy, Van Ogtrop stresses, is much more than recycling. Recycling is only the last option, if reuse, refurbishment and remanufacture are not, or no longer, possible.

Selling services

Changing our view of how we use products: that is the essence of the circular economy. Selling services instead of products, for example. Van Ogtrop's Circle Economy has done a number of projects with Philips. "When the world switched to LED light bulbs, Philips had a problem because these light bulbs don't need to be replaced every few months. At that point, you could say, 'My business model is broken because these light bulbs last for ten years' or you could move on to selling the service. So, for example, Philips makes a contract with Schiphol to sell light as a service – for the runways, duty-free shops, lounges, everywhere – for a fixed monthly rate. Then all of a sudden, the company benefits from long-lasting light bulbs, because they don't need to keep sending people to climb high ladders and change them. In the words of Johan Cruyff: 'You'll only see it when you realize it.' Or when innovation forces you to think differently.

And it doesn't stop at light bulbs. The same principle applies in the medical industry, for example, with MRI scanners. In the old linear economy, Philips benefited from the launch of a new model every two or three years. Hospitals would then just dispose of the old model, for which they might have paid a few hundred thousand euros, and buy the latest one. "In the circular economy, Philips sells the service or leases the machines rather than selling them. Therefore, it remains the owner of the equipment and thus benefits from its longer service life. Improvements are implemented in a modular way, which means that instead of having to be replaced, the machine is upgraded. So, over time, the value of the equipment increases rather than decreases. The great thing is that Philips also knows when the MRI scanners will eventually be returned (after, say, 20 years), what parts they contain and how many of them can be reused."

Mental agility

Anecdotes are useful to explain how the circular economy works, but not every industry is equally suitable for that. Circle Economy carries out countless 'circle scans' for companies and, for the past few years, also for cities, to see what is possible within their current linear business models. "The most important thing is that we need to realize that we don't have to keep buying things and then throwing them away in the rampant consumerism of our modern age. Right now we prefer to buy cheap goods in China, have them transported halfway across the world in large ships, throw them away after a short while, and then start again. We think that this boosts the economy, which is true – in the short term. But it's also incredibly shortsighted when you consider how much material is used – not to mention the carbon emissions from those container ships. It is all extremely misguided and incredibly harmful. When you become aware of this, you automatically come to this much more intelligent way of producing and consuming."

And that brings us to the very best news, according to Van Ogtrop. Studies by McKinsey and the Ellen McArthur Foundation have calculated that the transition from the old linear economy to the circular economy represents a business opportunity of EUR 1.8 billion per year – in Europe alone. "But that requires systematic changes. Firstly, it costs money, because you have to convert machines and set up production processes differently. And it has to be financed differently. To return to the example of Philips, they used to sell those expensive medical machines and use the money this brought in to make the new generation of machines. In the new model, they remain the owner of the machines and this is on their balance sheet.

The lease rates are not enough to finance R&D and the production of newer machines, so you need external financing from banks that understand how the business model works. This also requires another kind of mental agility on the part of the bankers and financiers of this world."

Five stakeholders

There is no shortage of capital to finance this transition, says Van Ogtrop. But you have to make investing in circular business models attractive for financiers. The biggest share of the pie is held by institutional investors. They also have an interest in sustainable investing, but returns have to be generated – in the short term, too. "But it's important that large investors be willing to sacrifice some returns in the short term in order to achieve better returns in the long run, and thus also support the SDGs. That's the hard part of any systematic transition: convincing all the relevant shareholders. And Van Ogtrop knows exactly which stakeholders he's talking about. He has divided them into five groups: politicians, business, the financial sector, science and education, and media and communication. "If you can get all of these on board and ensure that they embrace the circular economy, with the premise that it doesn't need to affect long-term returns, you can go a long way."

There is no fixed hierarchy for these five stakeholders, says Van Ogtrop. "Businesses and politicians have to step up to the plate. They can't do it without each other. For example, you can promote circularity through taxes. During the Industrial Revolution, governments started to charge tax on employment (which was scarce) and not on raw materials, as these were in abundance. The situation now is radically different, but we never changed the taxes. Now you would have to drastically reduce the tax on employment and increase that on raw materials. Then you'd automatically start making products that last much longer and when they did break, you'd have them repaired instead of throwing them away – which in turn would create jobs in your own country. Governments are needed for this, and that's slowly starting to dawn on the powers that be in The Hague and Brussels."

No saint

The fact that it has taken so long is mainly due to the lobbying of big companies, the biggest culprit being the fossil fuel industry. "This really has to stop now. And then we come back to the institutional investors. They finally have to say: enough is enough, we're going to stop investing in fossil fuels. Then things could go fast. Everyone gets that transition doesn't mean you can turn off the tap just like that. On the other hand, we've started fracking to extract the last remaining oil and gas from the ground, using a high-pressure mixture of clean water and chemicals – while the sun shines for free all day. But the oil majors can't build a business model around sunshine. We see the financial world as a partner of the business community and it has always had a facilitating role. Unfortunately, this has degenerated somewhat into an industry itself, with money making becoming an objective in itself."

People are conditioned in such a way that they don't like change, says Van Ogtrop. It is always easy to pass the buck for change to the next generation. Yet things, and people, can change. "I'm from that linear economy, and took full part in it as a CEO and in the world of private equity. The world of machismo, money and power. But after experiencing the power of nature, during a trail in Africa, this changed. I had taken a sabbatical to refocus and I asked myself the following question: where am I in life? We live in the middle of paradise, but we don't see it anymore, because we fill it with office blocks and glass towers. We too easily turn a blind eye to what's happening around us. Me included – I'm no saint, either. But if we really want to create a circular economy, radical changes are needed."

From 8 to 80

Just 8.6% of the entire economy is currently circular. This is according to figures presented at the beginning of 2020 for the third consecutive year in Davos in the Circularity Gap Report, which the Circle Economy draws up in conjunction with the World Economic Forum and World Research Institute. Strikingly, this figure is lower than the 9.1% presented a year earlier. It's movement in the other direction, which Van Ogtrop largely puts down to the growth of more linear economies in China and India, with their enormous use of raw materials. "We still have a huge amount of work to do," Van Ogtrop admits. Which he immediately follows by saying that, particularly in the West, many good things are happening.

"Moreover, President Xi understands that things can't continue as they are, with all the smog and increase in coal power plants. He has to do something if he wants to stay in power. And if a country like that, with its centrally planned economy, hits the circular button, change could happen very fast. Faster than it does here, thanks to our polder model." Ultimately, the circular economy has to be able to grow to represent 20% of the global economy in around ten years. But Van Ogtrop's dreams are bigger. "We have to make 80% circular in the end."

Think big

Following on from the 'waste doesn't exist' mantra, waste flows can already be converted into hydrogen, which could be used to fuel the polluting container ships. Even the kerosene used to fuel planes can, in theory, already be made from waste products. But the technology for this is relatively expensive at this time. "Technologically, it's been possible for quite a while, but people clearly aren't willing enough to invest in it yet. And herein lies the task of governments. If they were to stop providing USD 5.2 trillion in fossil-fuel subsidies worldwide each year and invest that money in new technology, the necessary economies of scale and transition would follow. Oil companies could play a significant role in this, but it isn't happening because they can't think beyond the boundaries of their old business model. For fossil fuels, it's game over." If there are companies in the industry that do change course, you have to reward them by investing heavily in them, argues Van Ogtrop. "It's possible, but you need CEOs with vision and nerve. It doesn't have to be perfect from the outset, but we do all have to go in the right direction. That starts with awareness, with a sense of urgency. And there's a serious shortage of that." →


BUILDING A FUTURE

SUSTAINABILITY AND PROFITABILITY

'In 2010 I started Circle Economy. It is an impact organization based on a dream in which I saw five circles, each representing one of the essential stakeholders that need to work together if we want to achieve long-lasting system change towards circularity: politicians, business, the financial sector, science and education, and media and communication. We have gathered massive amounts of granular data. We use this data to advise companies and cities on how to transition to circularity. Whatever the time and whatever the place, we stress that it is possible to combine sustainability with profitability.'

WHAT HOLDS US BACK ARE THE VERTICAL LINES OF POWER THAT WE'VE CREATED TOGETHER IN THE LINEAR ECONOMY

Capitalism

Can capitalism and a circular economy exist alongside each other? Yes, says Van Ogtrop. "But not the excessive capitalism that we have now. You need capitalism with an awareness that we're part of nature, of this planet. Our aim should be an economic model that is regenerative in itself – in other words, not unilaterally exhaustive. Capitalism, liberalism and the free market economy have proven to work more effectively than socialism, communism and combinations of the two. So 'yes' to capitalism, but the financial parameter – shareholder value creation – shouldn't be the only focus; you also need to strike a balance between ROI on the one hand and the social component on the other. Wage inequality has to be dealt with, without going all the way down the Piketty path. I'm not against capitalism, but against some of its manifestations that we see today, in which the short-term shareholder value model reigns. A great deal has gone wrong there."

Van Ogtrop adds that metrics are needed to measure and report the ESG performance of companies to shareholders. "If the hundreds of billions from institutional investors could be used to accelerate this transition, we would really get things moving." The stumbling block is the measuring and reporting; that's currently a huge challenge. "CO_2 is the most concrete factor we measure, but no one seems to have anything to say after that. Our aim should be for companies to measure and report on their degree of circularity. Then you can benchmark companies and, for example, stop investing in them if they stay below 15%. Then things will start to happen."

Removing bastions

How far are we from this? "It's an uncompromising world. We're a long way from seeing such things in business reports, but I think that we'll start to see the first form of impact investing metrics in the next five years, which also directly relate to circularity." Real progress often needs to be preceded by a shock to the system, but Van Ogtrop hopes for a number of other trump cards as well: technological innovation, disruption and the new generation. That could be the successful cocktail which brings about the big change. "What holds us back are the vertical lines of power that we've created together in the linear economy, including in the financial world and in the world of fossil fuels. It is very difficult to get these bastions to change." Van Ogtrop is quick to avoid pointing the finger. "Not because they're bad people – I've been one of them, been at the heart, I know how it works. You have no choice but to fall in line: you know that 'these are the rules of the game, that's how it's played'." And what makes matters even more complex is that the players of that game have close ties with politicians, through all the lobbying, says Van Ogtrop. "The internet is a godsend in that respect – the means to make everything much more horizontal and eradicate the vertical lines of power. There is no stopping the internet-induced horizontalization. You can see this in Kenya – the first country to introduce mobile banking ten years ago. Why? Because there weren't any strong banks that could stop it at the time. Innovation and disruption are essential in that sense."

Waste beer

Van Ogtrop wouldn't be Van Ogtrop if he didn't end on a positive note. So he takes us to Glasgow, Scotland. "People often ask me how we can achieve a world without waste. We have learned a lot from the 'circle scans' we carry out for cities. Four years ago, we scanned all of the material flows in Glasgow, charted their paths and studied what happened to them. To cut a long story short, the biggest bread factory in the city dumped all of its waste into the river. So, then you analyze all the waste products in the bread factory's waste flow. There's a large beer brewery two kilometers further along. So, you look at which ingredients they need to make beer, and analyze these too. And what did we find? 70% of the waste products from the bakery could be reused as input for the beer brewing. The first beer brewed from that waste was undrinkable. But after some finetuning, they'd made a pretty decent pint."

This anecdote is for Van Ogtrop also a bridge to his visions of the future. "If we were to make a global web-based marketplace on which, with the aid of artificial intelligence, we charted all waste flows – as well as all the components of those waste flows – we would have a database in which we could match material supply and demand. How fantastic would that be?" But Van Ogtrop's dreams don't stop there. "And I'd add another dimension: technology. I could convert these waste components using gasification, fermentation, heat or chemical processes, and combine them with other waste products to create optimum, maximum input for new production processes. Then your dream in which waste no longer exists would be reality."

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Contact

Robeco
P.O. Box 973
3000 AZ Rotterdam
The Netherlands

T +31 10 224 1224
I www.robeco.com

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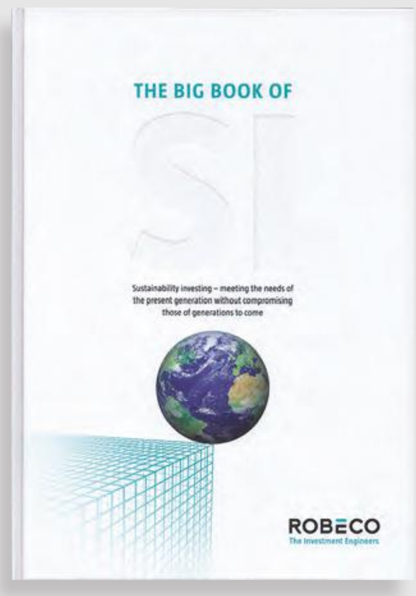

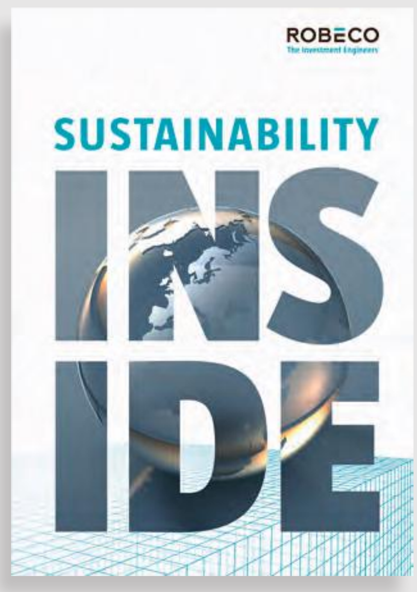

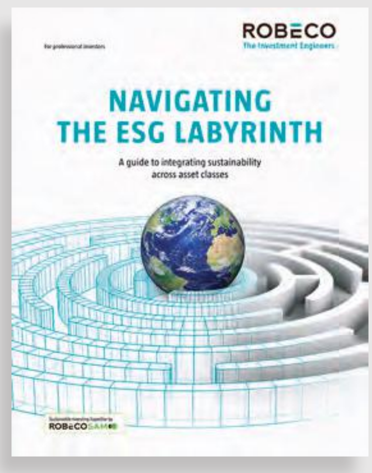

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