

# IMPACT REPORT

## Jupiter Ecology Fund

March 2021

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About the 'climate stripes': The climate warming stripes graphic depicts annual mean global temperatures (1850-2018, from World Meteorological Organization data), said to have been produced for the World Meteorological Organisation (WMO) provisional State of the Climate report. The use of the graphic represents Jupiter's firm-wide, public commitment to playing its part in actively addressing one of the greatest challenges facing our planet. Credit: climate scientist Ed Hawkins, University of Reading, UK. For further details, please see here. Use of the graphic does not imply endorsement of any product or service by its creator. Graphic used under licence: Creative Commons — Attribution-ShareAlike 4.0 International — CC BY-SA 4.0.

**Ecology** /ı'kɒl.ə.dʒi/ the relationship of living things to their environment and to each other.

Source: Cambridge Dic<u>tionary.</u>

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## Human and economic wellbeing are embedded in the biosphere, but our biosphere is currently facing severe degradation.

Functioning natural systems are at the heart of human development. Relative climate stability and abundant ecosystem services have enabled societies' advances until the present day.

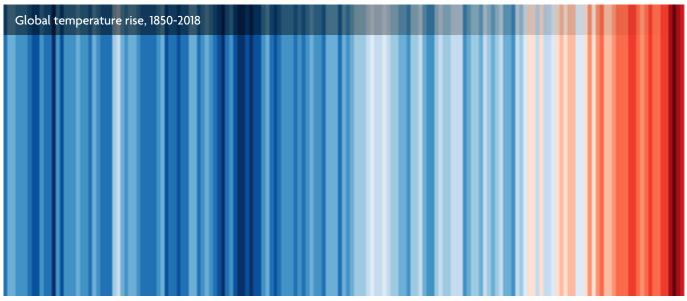
The industrial age has brought extraordinary advances to human prosperity and wellbeing, but it has also knocked our ecology out of balance. The Sixth Assessment Report (August 2021) produced by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body responsible for assessing the science related to climate change, reaffirmed the unprecedented changes in climate unequivocally caused by human activity, and international institutions have noted that humanity has already altered more than two thirds of the Earth's ecosystems.

Species extinction and other aspects of the unsustainable depletion of natural capital and biodiversity further exacerbate the climate crisis and hinder the adaptive capacity of society and nature.

Solving these environmental challenges will constitute a defining feature of the twenty-first century. It will not be easy. However, the obstacles are not insurmountable: the requisite technology for rapid, large-scale reductions in greenhouse gas emissions described by the IPCC are largely available today, with additional solutions on the near horizon.

In meeting these vital environmental objectives, these solutions also form robust, long-term investment opportunities.

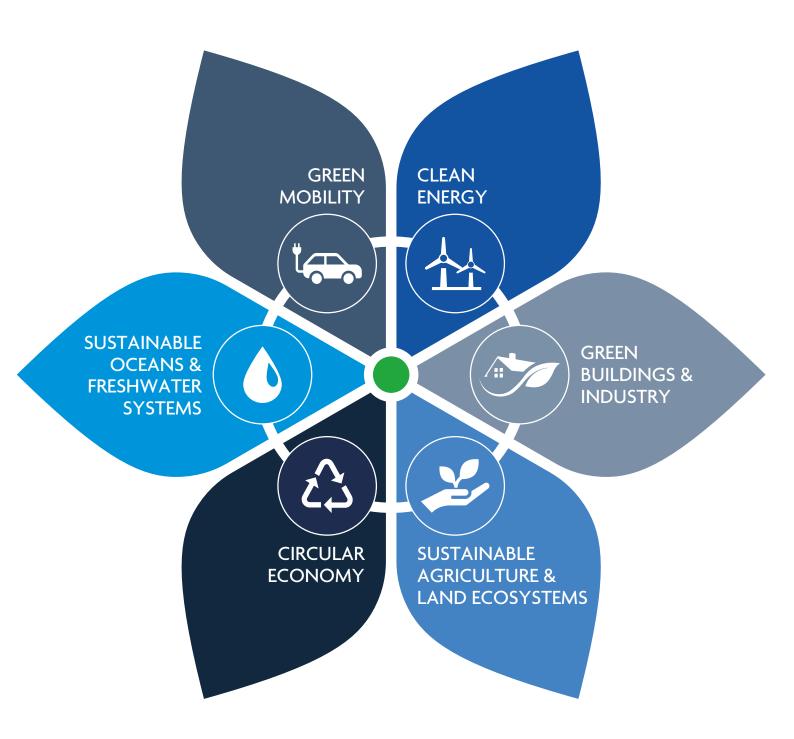
"The climate we experience in the future depends on the decisions we make today. Every tonne of CO<sub>2</sub> emitted incurs additional warming, affecting the wellbeing of nature and of current and future generations."



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## **Investment strategy**

Our investment strategy seeks to provide capital growth with the prospect of income over the long term (at least five years) by investing in companies whose core products and services address global sustainability challenges. We have a key focus on the foremost challenges of our time: climate change and natural capital restoration. We do this by allocating capital to securities we believe are making a material contribution to six solutions themes: clean energy; green mobility; green buildings and industry; sustainable agriculture and land ecosystems; sustainable oceans and freshwater systems; and circular economy.



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## Impact methodology

Our investment strategy seeks to invest in securities we believe are meaningfully helping to solve the environmental challenges of climate change and natural capital restoration. Measuring impact helps ensure that this intentionality and authenticity of approach translates into meaningful outcomes in our choices of capital allocation. By the term 'impact', we mean the impact on society and the planet of the goods and services produced by our portfolio holding companies, rather than inferring that investing activity is directly contributing to impact alone.

Impact measurement techniques continue to evolve alongside the prevalence and quality of corporate sustainability data reporting. However, it remains challenging to collate data that is meaningful, consistently applied and reflective of a company's broad scope of impact, covering the multitude of environmental themes a company's actions will affect. For carbon reporting, we have analysis covering 88% of holdings. However, for a metric such as waste avoided or recycled, the coverage is considerably smaller, reflecting more limited reporting of the metric and also the current portfolio allocation to companies focused on waste recycling activity.

Within the impact measurement industry, carbon reporting and measurement is the most advanced. However, carbon reporting is typically undertaken with a narrow scope by focusing on operational emissions (scope 1 and 2). In our view, to fully capture a company's contribution to society's future decarbonisation pathway, one must have a broader perspective and also attempt to measure scope 3 in addition to avoided emissions (also referred to as "emissions savings"). By including avoided emissions, we capture the value of innovations aimed at meeting the climate mitigation challenge and indeed enabling the process of reducing scope 1 and 2 emissions in the wider economy over time. Impartiality and sufficient expertise are crucial to the credibility of our efforts and our obligations to clients. For this reason, we commissioned Carbone4<sup>1</sup>, an independent consulting firm with a long-standing record, to conduct a comprehensive analysis of portfolio induced<sup>2</sup> and avoided emissions.<sup>3</sup> As an investment team seeking to deliver a low-carbon outcome and leverage environmental opportunities as a primary objective – as opposed to an aim solely to avoid risks via investment in low-carbon sectors we recognise this may mean a higher portfolio emissions profile in the short-term, for example due to investments in rapidly transitioning utilities, or chemicals firms producing key components for electric vehicle (EV) battery technology and optimisation. Many industrial processes are by nature emissions intensive, even if the end product contributes to decreasing the emissions intensity of society at large or the achievement of other environmental objectives.



6

## Enabling net zero ambition

In February 2021, Jupiter signed the Net Zero Asset Manager's Initiative, committing to supporting the goal of net zero greenhouse gas emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5°C. In making this commitment, we recognise the urgent need to accelerate the transition towards global net zero emissions and for asset managers like Jupiter to play our part to help deliver the goals of the Paris Agreement and ensure a just transition.

Jupiter has also signed the Finance for Biodiversity Pledge, committing to introduce targets by 2024 to address significant risks and opportunities for biodiversity amongst our investments.



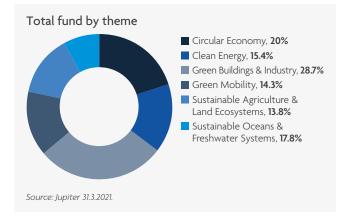
Our Environmental Solutions team is in an excellent position to contribute to Jupiter's firm-level commitments on Net Zero and the Finance for Biodiversity Pledge:

Though our scope is narrower than the wider securities universe by virtue of our mandate, securities held more widely at Jupiter are utilising the products and services produced by our investee companies to meet their commitments of a Paris- and Kunming-aligned future by 2050. For example, Adidas, GSK, and Microsoft are not present in the Environmental Solutions team's portfolios but are held more widely at Jupiter and amongst the firm's top holdings by weight. Each are using solutions offered by our investee companies to meet their net zero goals and to reduce their impact on natural capital and biodiversity, directly or indirectly:

- Microsoft has identified the transition of its datacentres as a key component of its strategy to meet its goal to be 'carbon negative by 2030'. In a partnership including Eaton's EnergyAware technology, Microsoft successfully piloted a grid-interactive energy storage battery in 2020, allowing a battery usually sitting in the datacentre to act as a backup system.<sup>4</sup>
- GlaxoSmithkline (GSK) has pledged net zero impact on the climate by 2030. Environmental Solutions team holding Schneider Electric received recognition as a leader amongst the company's suppliers, receiving the GSK Supplier Environmental Sustainability Reward.
- Adidas has set ambitious targets for the reduction of water consumption in the supply chain by 2025, which it hopes to achieve through the application of new technologies.<sup>5</sup> Solutions innovators like our strategy's holding Re:newcell, a textile-to-textile recycling company for cotton, could well help Adidas meet this goal by avoiding the high water intensity of cotton fibre production, which primarily arises in the first tier stage of cotton agriculture.<sup>6</sup>

# PORTFOLIO-LEVEL IMPACT MEASURES

The allocation of capital by the Jupiter Ecology Fund across activities represented by our six themes are shown below:



Our six themes broadly align with the six sustainability objectives of the EU Taxonomy (see Appendix). We are developing approaches to measure the contribution of the portfolio holdings against the EU Taxonomy and will endeavour to provide preliminary data in our next impact report as corporate data availability improves.

The table below illustrates the indicative impact of companies held in the portfolio as it relates to an environmental challenge relevant to their operations. The table focuses impact measurement at the activity level rather than portfolio level and considers those holdings within the portfolio that provide solutions to the challenges of water treatment, renewable energy generation, greening of transport and waste recycling. The intensity and absolute figures are weighted by the portfolio allocation to companies with operations related to the relevant solution. Enterprise value is used for the intensity calculation rather than market capitalisation in order to capture the full contribution of capital (including debt as well as equity) to a firm that is not altered by financing decisions. In addition, where data from firms are not comparable due to differences in the value add their products contribute to a particular economic activity or process, then we took a conservative approach and excluded those holdings from the analysis. For example, there were three companies in the portfolio that provided measurable data on water treatment activity. On average, these companies were estimated to treat 2,542,937 million litres of water over the year, which equates to the water usage of approximately 48 million European households. There was another holding operating in water treatment sector which does not currently produce data and another two companies that produce water treatment data but not on a comparable basis.

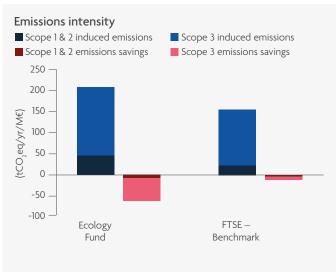
Solution	Economic activity	Number of companies analysed	Metric	Metric / €m EV	Average amount (weighted within holdings analysed)	Equivalence of indicative holding outcome
Provide clean and reusable water	Water treatment	3	Million Litres	147	2542937 ML	Equivalent to annual water usage of 48m European households
Increase renewable energy production	Production of electricity	3	GWh Generation	1.2	12736 GWh	Equivalent to annual electricity usage of 715,775 European households
Greening of transport	Transportation	5	tCO₂e avoided	94	1111004 tCO2e	Equivalent to carbon footrpint of 165,821 European citizens
Increase recycling rates	Waste treatment and disposal	8	Tonnes waste	612	3029265 t	Equivalent to waste generated by 582,551 European households

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#### PORTFOLIO-LEVEL IMPACT MEASURES

## **Carbon savings**

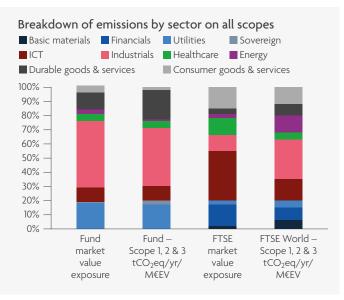
The following analysis considers the portfolio level carbon reporting. The contribution of the portfolio holdings to mitigating climate change is reflected in its emissions savings of 64 tCO<sub>2</sub>/y/M€ (enterprise value), which compares favourably to the FTSE World index (used as a proxy of global private sector emissions) of 10 tCO<sub>2</sub>/y/M€. This is largely driven by the portfolio's holdings within its clean energy theme, although the green industry and buildings theme also made a meaningful contribution.

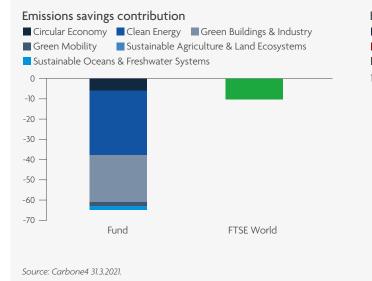


Source: Carbone4 31.3.2021.

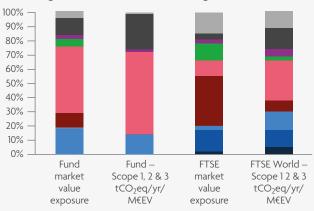
The Jupiter Ecology Fund's bias towards industrial companies, and its more modest exposure to technology versus the FTSE World index, results in a higher level of induced emissions.

Going forward, we intend to incorporate third-party verified and net zero targets more firmly into our engagement strategy with investee companies. As no standardised dataset exists for this information, we are currently gathering the requisite data on our portfolio holdings, which will then inform our next steps.





# Breakdown of emissions saved by sector on all scopesBasic materialsFinancialsUtilitiesSovereignICTIndustrialsHealthcareEnergyDurable goods & servicesConsumer goods & services



# CLEAN ENERGY •



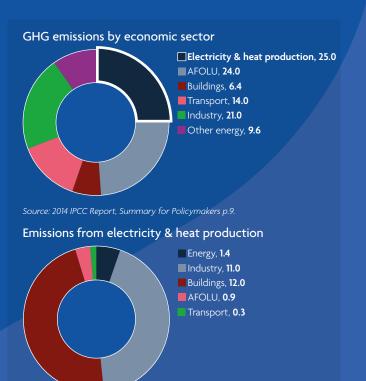


"Achieving net zero will require nothing short of the complete transformation of the global energy system."

# The challenge

Energy – whether produced at a power station, or used locally to propel vehicles, fuel industries, and heat homes – is the primary contributor to climate change. It is the source of nearly all emissions of CO<sub>2</sub>, the most predominant greenhouse gas.<sup>7</sup> Electricity and heat production are responsible for about 25% of direct emissions from energy, of which virtually all helps power buildings and industries, with transport growing rapidly in the coming decades.

Clean energy is thus a solution intersecting nearly all our themes. We depend on energy for every aspect of our lives, and this is likely to expand as electrification replaces local use of fossil fuels. For example, fulfilling green mobility requires the roll-out of battery electric vehicles (BEVs) and electrified high-speed rail, but to achieve climate mitigation these must plug in to a grid that is at least less emissions intensive than the fuel that would otherwise power it locally. Given this cross-cutting nature, we sharpen our focus on clean energy by solely classifying investments in energy generation, transmission and distribution under this theme.



Source: 2014 IPCC Report, Summary for Policymakers p.9.

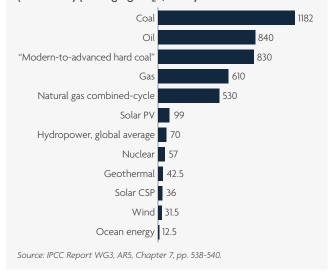


# A solutions lens

It's one of the few environmental challenges where the answer, at the surface, can be summed up in just a few words: decarbonise the energy supply. Beyond climate, this would bring immense natural capital and human health benefits.

Meeting net zero by 2050 will require a more than tripling of annual clean energy investments by 2030, to around US\$4 trillion worldwide.<sup>8</sup> Generally, coal is the most GHG intensive fossil fuel, and natural gas the least, but methane leakage can affect this dynamic. Renewables like wind, solar, and geothermal are clear solutions but their intermittency requires investments alongside in energy storage and grid optimisation. When reading about 'renewable' energies, it is important to remember that not all are necessarily low carbon, such as biomass or waste to energy sources, depending on the feedstock. The emissions factors of common energy sources are shown opposite:

# Average comparative lifecycle GHG emissions (IPCC 2014) (average gCO<sub>2</sub>e/kWh)





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## Orsted

Orsted is the world's leading offshore wind farm developer with installed offshore wind capacity of 7.6GW, with most of its capacity installed in the UK, Netherlands, Denmark and Germany.

#### **Solutions**

Offshore wind farms are a key technology in the fight against climate change, as they produce electricity without harmful emissions, while their location on open seas benefits from stronger and more regular winds than is found onshore. Orsted's renewable energy production provides enough energy for 15 million people and it aims to supply enough renewable energy for 55 million people by 2030<sup>9</sup>.

Orsted's development of renewable energy plants enables private and public sector participants to reach their net zero targets. In 2020, Orsted agreed to allow Amazon to take 250MW of its offshore wind development Borkum Riffgrund 3 wind farm in the North Sea. The company is also playing a critical role in meeting Poland's and the UK government's offshore wind ambitions and is well placed to play a role in Biden administration's future commitments. CASE STUDY

# 1500

offshore wind turbines installed

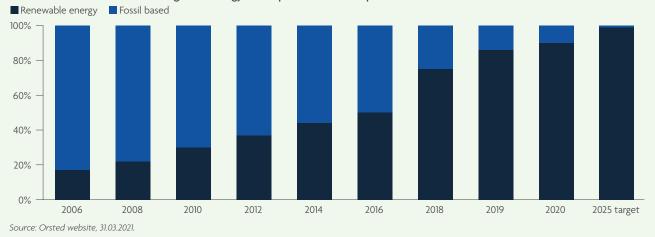
# 15gw

Source: Orsted.

offshore wind capacity targeted by 2025

# 55 MILLION

households targeted for the supply of clean energy by 2030



A credible transition – Orsted green energy share power and heat production

Company examples are for illustrative purposes only and are not a recommendation to buy or sell.

# GREEN MOBILITY •





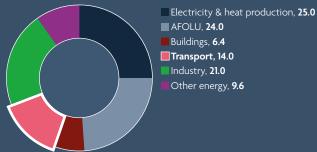
"Half of the  $NO_2$  pollution in London is from fossil fuel road transport. BEVs, which have zero tailpipe emissions, are part of the solution."

# The challenge

The IPCC estimates 14% of global greenhouse gas emissions from the transport sector – seven gigatons  $CO_2e$  annually – with road transport by far the largest contributor.<sup>10, 11</sup>

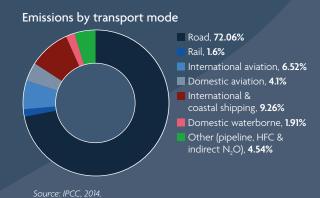
This tends to be even more the case in industrialised economies. Since 2016, transport surpassed energy supply to become the highest emitting sector in the UK,

#### GHG emissions by economic sector



Source: 2014 IPCC Report, Summary for Policymakers p.9.

responsible for about 27% of emissions in 2019, mostly from petrol and diesel in road transport.<sup>12</sup> Fossil fuel transport also emits non-GHG air pollutants with negative impacts for human health and nature, such as nitrogen dioxide (NO<sub>2</sub>). Half of the NO<sub>2</sub> pollution in London is from fossil fuel road transport.<sup>13</sup>





## A solutions lens

Solving this environmental challenge will involve shifting to zero tailpipe emissions transport modes for people and goods, such as BEVs, electrified rail, and cycling. Electric mobility modes can further boost the impact of public transport, which displaces cars on the road and carries important social co-benefits such as reduced inequality. Investment opportunities exist not only in the transport modes themselves but throughout their value chain.

### **Greening Mobility**

BBy 2024, there needs to be an additional 8.7 million BEVs and 20 million hybrids to meet the IEA's below 2 degrees scenario; if met, vehicles produced could emit as much as 1.5 billion fewer tonnes of CO<sub>2</sub> over their lifetimes.<sup>14</sup>

When thinking about EVs one commonly visualises the finished vehicle, or perhaps a charging station. However, before this are an entire set of investment opportunities in the upstream value chain: companies which produce key components that not only make the final vehicle possible, but help optimise features such as driving range, energy efficiency, and safety, encouraging the electrification of a wider range of vehicles and more consumer uptake.



#### CASE STUDY 🧃

#### Aptiv

Aptiv designs and assembles the electrical architecture of vehicles. It describes itself as providing the nervous system of a car: technology that enables the vehicle's eyes and ears (sensors) to send data to the brain (computing platforms).<sup>15</sup> Signal and Power Solutions is its largest division - about 75% of revenues - and its main markets in revenue terms are North America and Europe.

#### **Solutions**

Every bit of space and weight matters for EVs, which tend to be heavier than conventional vehicles (ICEVs) with implications for efficiency and range. This is because gasoline, alongside its CO<sub>2</sub> emissions and negative natural capital impacts, provides more energy per unit of weight than present battery technology.<sup>16</sup> In this context, Aptiv not only services but helps to optimise EVs through products which enable faster, higher current charging (high voltage cabling; inlet thermal cooling) and components with significantly less mass, weight, or height than the alternative (conductors from aluminium and copper; rigid but flexible busbar assemblies.)<sup>17</sup> We believe Aptiv's key role in the future of the industry leave it well placed to navigate a challenging return on investment backdrop for the broader automotive industry.



CASE STUDY

### Infineon Technologies

Infineon Technologies produces semiconductors, sensors, switches and other devices for a wide range of appliances. Its largest sector is automotive, at 45% of sales. Its main markets are Asia-Pacific and Europe.

#### **Solutions**

Infineon makes semiconductors, integrated circuits, and other key components for the internal systems of EVs.<sup>18</sup> How its products fit in comes naturally from an overview of a powertrain, the set of components which deliver power to move an EV.

Inside each EV is an electrified powertrain, which includes an on-board charger, battery (usually lithium-ion), a traction inverter, an electric motor and a transmission.<sup>19</sup> The electricity flows from each of

these devices to rotate the electric motor, which spins the transmission and thus the wheels, moving the vehicle.

Needless to say the battery pack is a central and alongside it a battery management system (BMS) is required to regulate and monitor features such as temperature, voltage, power consumption, and remaining operating time.<sup>20</sup> Infineon produces supporting products for the BMS, such as integrated circuits for efficiency, durability and reliability, and systems which monitor, balance, and perform diagnostics on lithium-ion battery packs.<sup>21</sup> With many competitor semi-conductor companies dominated by sales to the mobile phone market, Infineon provides the portfolio with a more focused lens on supporting the adoption of electric vehicles.



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# The IEA suggests an 'aggressive, strategic deployment' of rail could allow CO<sub>2</sub> emissions from transport to peak in the late 2030s.<sup>22</sup>

The rapid expansion of rail for passengers, and freight – is another piece of the puzzle for reducing greenhouse gas emissions from transport. Rail is the most electrified and least energy- and emissionsintensive of all motorised transport modes<sup>23</sup> and can also provide natural capital and societal benefits by reducing localised air pollution and congestion.<sup>24</sup>

Rail's value is foremost in replacing road transport, then air. It is unrivalled for routes with long-term certainty of high throughput volumes – think rush hour traffic in urban centres and commuting. High-speed rail lines can replace up to 80% of aviation transport on the same routes.<sup>25</sup>

Take the example of the Eurostar, an electrified high-speed rail system connecting London and several European capitals. Even if we assume the trains running at just below two-thirds on average, we see material emissions savings relative to other modes of transport, particularly single-driver internal combustion engine vehicles (ICEVs) (see table).

Daily journeys from London to Paris by Eurostar vs other transport modes:

Transport mode	CO₂e/p/km	N <sub>2</sub> O/p/km	Daily – tCO <sub>2</sub> e	Daily – tN <sub>2</sub> O
Eurostar	6g	NA	1.62	NA
Low-cost, short-haul flight (Easyjet)	70.8g	NA	19.1	NA
Average medium petrol; 2 passenger/vehicle	93.6g	0.18g	25.3	0.05
Average short-haul flight from UK (DEFRA)	153g	0.76g	41.3	0.21
Average medium petrol 1 passenger/vehicle	187.2g	0.36g	50.5	0.01

Sources: Eurostar Help Centre, accessed August 2021.; UK DEFRA. GHG Reporting: Conversion Factors; EasyJet 2020 Annual Report, p.33

#### **Knorr-Bremse AG**

Produces, sells, and services components such as braking and HVAC systems for commuter trains, freight trains, locomotives, and high-speed trains. Rail Vehicle Systems (RVS) contributed to 53% of revenues in 2019, with its main markets in Europe and Asia-Pacific. Its customers include the London Underground and the Eurostar e320.<sup>26</sup>

Solutions Knorr-Bremse products and services quite simply help build trains, but are also embedded with functions which optimise a train's safe, efficient, and quiet use of rail networks.

#### CASE STUDY

Some ideas can bring a dual use of safety and efficiency. Developing more precise rail vehicle braking solutions, such as via deceleration controls, is a focus for Knorr-Bremse<sup>27</sup>. By reducing the safety distance between trains, precise rail braking allows more trains to run on the same network.<sup>28</sup>

Another area which drew our attention to Knorr-Bremse was its intentional integration of environmental impact in the design of new products, informed by life cycle assessments such as to calculate product-related CO<sub>2</sub> emissions. One outcome of this is a high recyclability rate: over 90% for Knorr-Bremse RVS division products.<sup>29</sup>

METRIC 1:

2,238,614 tCO,e

total emissions savings

METRIC 2: €396 MILLION invested in R&D (2020)



Source: DRST210003\_CSR\_Bericht\_2020\_01\_ Umschlag.indd (knorr-bremse.com). Pages 13, 32 & 65.

# GREEN BUILDINGS & INDUSTRY



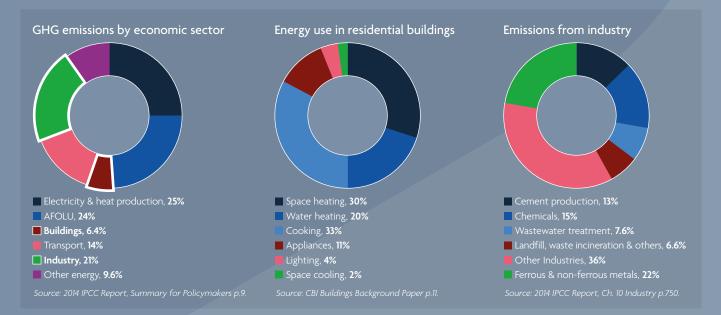


"80% of efficiency improvements for existing buildings remain untapped globally"

# The challenge

Together, buildings and industry are responsible for around 27.4% of global GHG emissions. If we also count indirect emissions from electricity usage, this figure rises to about 51%, which is more than 25 gigatons annually.<sup>30</sup> The main primary energy end use for commercial and residential buildings is heating and cooling: of water, space, and for cooking.<sup>31</sup>

In industry, making things – manufacturing – is responsible for virtually all direct emissions (98%).<sup>32</sup> This primarily arises from the need to create intense heat, achieved through chemical reactions and/or fossil fuel combustion, to convert raw materials into products such as cement clinker, aluminium, iron and steel, chemicals and petrochemicals, and other items.<sup>33</sup>



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## A solutions lens

Green buildings use decarbonised and efficient ways to keep warm and cool, with energy efficiency integrated into their design. Greening the building stock will require deep retrofits in existing buildings and securing a supply of low carbon electricity and building materials.<sup>34</sup> At present, it's estimated that 80% of efficiency improvements for existing buildings remains untapped globally.<sup>35</sup> Solving industry will require innovations to reduce the emissions associated with raw materials like cement and steel. This will be difficult, as CO<sub>2</sub> is inherent in their production: for example, the chemical conversion process for clinker in which limestone (CaCO<sub>3</sub>) is converted to lime (CaO), and the use of metallurgical coal ('coke') for steel production.

#### CASE STUDY 🧃

### A.O. Smith

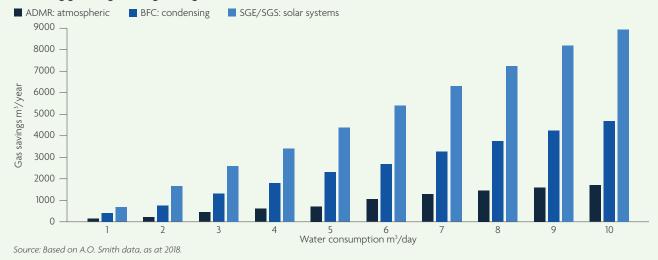
A.O. Smith makes equipment for residential and commercial water heaters, boilers, and most recently water treatment products. It operates primarily in the United States with some presence in the EU and China.

#### **Solutions**

As with many of our investments, A.O. Smith's environmental solutions are also a competitive advantage. It cites the energy efficiency of its product offerings as a differentiator, as customers seek shorter payback periods through energy savings.

More than 20 years ago, A.O. Smith led the way in energy efficiency through the introduction of condensing gas-fired boilers, with gas usage efficiency values of up to 109%.<sup>36</sup> Today, we consider it a transition name in the portfolio, as most its products minimise natural gas usage through greater efficiency and substitution by incorporating renewable energy. This includes its Cyclone and CREST Boilers - with thermal efficiencies of up to 98% - and its SGE and SGS gas-solar water heater systems, which combine gas condensers with renewables to yield even greater efficiencies, as shown in the graph below. However, it also produces heat pumps and electric water heaters.

A.O. Smith also contributes to natural capital – oceans and freshwater systems – through its water filtration and treatment products. These products can help displace demand for plastic bottled water by improving taste and increasing consumer confidence in the safety of their tap water at home – a 2016 poll by the Associated Press found less than half of Americans are confident in the safety of their tap water.<sup>37</sup> In 2019, A.O. Smith systems and replacements in North America alone filtered approximately 154 million gallons of drinking water – assuming the consumer base matches nationwide statistics this replaced at least 600 million plastic bottles.<sup>38</sup>



#### Achieving greater gas savings with gas-solar water heaters





## Schneider Electric

The company's products and services operate in and at the intersection of energy management and industrial automation. More than 90% of customers are in four sectors: buildings, IT and data centres, industry, and infrastructure.

#### Solutions

Described as "the world's largest invisible brand" by Chief Marketing Officer Chris Leong,<sup>39</sup> Schneider Electric's products and services help promote the smarter and more efficient use of energy in buildings and industry. Straightforward examples include electricity meters<sup>40</sup> CASE STUDY 🧃

and valves for heat pumps<sup>41</sup>, but a less visible but highly impactful example is Schneider Electric's EcoStruxure which helps identify inefficiencies, bringing energy and water savings and reducing pollution from buildings and industries. The company estimates EcoStruxure has brought up to 50% carbon footprint reductions to customers<sup>42</sup> which include hard-to-abate sectors like cement<sup>43</sup> and steel<sup>44</sup>. Schneider Electric is well positioned to benefit from the increasing numbers of companies signing up to net zero pledges and in turn is seeking to reduce their carbon intensity throughout their operations.

#### SOLVING CLIMATE:

134 MILLION

metric tons of CO<sub>2</sub> avoided in 2020. Science-based target for 2030 (1.5 C). Net zero by 2050.

Source: Schneider Electric.

PROMOTING A JUST TRANSITION:

400,000

people in situations of underprivilege trained in energy management SOLUTIONS

80%

green revenues

# SUSTAINABLE AGRICULTURE & LAND ECOSYSTEMS





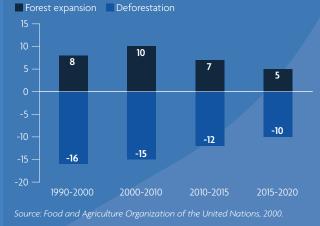
"Distinct from other economic sectors, AFOLU emissions are mostly methane and nitrous oxide rather than carbon dioxide"

# The challenge

Agriculture, Forestry and Other Land Use (AFOLU) incurs about 23% of global greenhouse gas emissions, or about 12 gigatons  $CO_2e$  annually.<sup>45</sup> Distinct from other sectors, the emissions are mostly methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) rather than carbon dioxide (CO<sub>2</sub>). The main sources are emitting activities and the depletion of sinks - approximately 50:50 agricultural production and deforestation.<sup>46</sup>

Focusing on agricultural production, leading sources are livestock, such as beef and dairy cattle, and other ruminants which digest food via enteric fermentation, followed by nitrous oxides from fertilisers – both synthetic and manure on pasture.<sup>47,48</sup> Deforestation, particularly in tropical zones which tend to have high stocks of biodiversity, are another serious challenge. It is often linked to livestock, or the production of commodities such as soy (primarily for livestock feed) and palm oil,<sup>49,50</sup> and in effect may replace sinks with net emitting activities.

Annual rate of forest expansion and deforestation, 1990-2020





# A solutions lens

The challenge in front of us is hugely difficult. The world's population is set to grow to 8.5 billion by 2030,<sup>51</sup> and despite efforts to meet SDG 2 for Zero Hunger, the UN expects people affected by hunger to surpass 840 million by 2030, which is 150 million more than today.<sup>52</sup> Solving this environmental challenge includes an urgent need to shift to lower carbon protein sources, sustainable forest management, and improved agricultural efficiency.

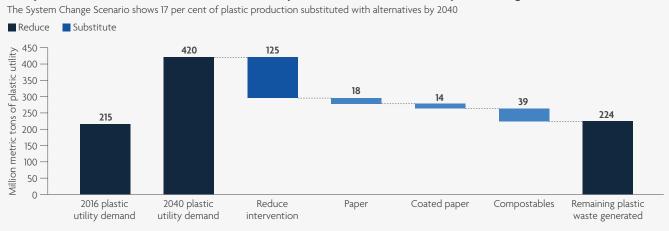
Plant-based foods are amongst tropical deforestationrelated commodities, but this does not discount the environmental benefits of a plant-based diet because significant portions of the crop are for livestock feed or biofuels. Plant-based commodities which displace human consumption of animal proteins should result in far less land use, often without sacrificing nutrition profiles.

Solutions can also be found in the sustainable packaging and paper sector in instances where companies are reducing pressure, pollution and allowing for regeneration. Finding opportunities that reduce paper usage, such as via digitisation, is part of the solution. It is unlikely to be feasible, nor is it desirable, to eliminate paper from our lives entirely: paper has existed for millennia and fulfils important economic, social, and cultural purposes. Its high recycling rate in many countries and lower impact if accidentally

released into ecosystems presents an environmental opportunity to replace plastic packaging. A report by the Pew Charitable Trust and Systemiq, Breaking the Plastic Wave, estimates that paper, coated paper, and compostable materials could meet 17% (or 71 million metric tons) of the plastic utility demand by 2040.53

Fulfilling these needs in an environmentally sustainable manner underlines the imperative to sustainably source forestry materials through credible certifications which apply a Chain of Custody (CoC) approach, documenting the raw materials at each stage of processing from forest to end-user.54





Utility demand in 2016 and 2040, and how it is met by the substitute levers in the System Change Scenario

Source: Breaking the Plastic Wave, p.56.



### DSM

DSM is a life and materials sciences company focused on nutrition – 53% of revenues by end user relate to nutrition products and human, animal nutrition and health (BBG). Its main markets are Europe and Asia-Pacific, followed by North America.

#### **Solutions**

DSM's Food and Beverage division includes a portfolio of ingredients to help improve the taste, texture, and vitamin content of plant-based proteins. Three examples are Delvo Plant and Maxarome Select, which support an umami taste by masking the beany flavours of some plant-based proteins, and Multirome, which provides plant-based proteins with a juicy, fatty quality mimicking that of meat.<sup>55</sup>

In addition, DSM's Animal Nutrition and Health segment produces vitamins, enzymes, and other feed additives which can increase efficiency and reduce the environmental impact of animal protein production. For example, its product Veramaris is an algae-based oil with 50% concentration of key fatty acids to feed and maintain the health of salmon<sup>56</sup> while its Bovaer feed additive for cows aims to reduce enteric methane emissions by 30-90%. The Global Methane Pledge (signed by 100 governments) and the Dutch government's proposals to slash livestock numbers to address climate risks, highlights the increased pressure the agricultural sector is under to manage climate transition risks. DSM's strong presence in these markets leaves it well placed to be part of the solution.

CASE STUDY



NATURAL CAPITAL RESTORATION:

TON

of Veramaris omega-3 oil saves 60 tons of wild-caught fish<sup>57</sup>

#### JUST TRANSITION PRINCIPLE:

1,539 jobs created in 2020

CLIMATE MITIGATION:

538,788 tCO<sub>2</sub>e

total emissions savings

INNOVATOR:

Piloting green

hydrogen

Source: DSM.



CASE STUDY 🧃

### Novozymes A/S

A biotechnology company headquartered in Denmark. Its business is focused on what it calls 'biological problem solvers' – enzymes and microbes – with its main markets in the Europe, Middle East & Africa and North America.

#### **Solutions**

Novozymes Food, Beverage & Human Health segment includes products to improve the flavour of plant-based proteins and dairy. For example, Its Oat360 product range helps create oat milk with smoother, mildly sweeter flavours, with less added sugar.

In addition, Novozymes' BioAg segment, includes products which increase agricultural efficiency and replace or reduce the use of synthetic fertilisers. For example, its Optimize400 helps improve the yield, nutrient uptake, and stress resilience of soybean crops in Europe.<sup>58</sup> A Norwegian network and purchasing cooperative for salmon aquafeed reported that sourcing soy from Europe instead of Brazil could help cut associated GHG emissions by 17%, largely due to reduced emissions from transport and land-use change<sup>59</sup>.

Partnering with

50% SBT target (1.5C) \*Scope 1-2 emissions, 2018 base year. SBT framework

GENDER DIVERSITY LEADER: 50:50 executive leadership team

Source: Novozymes, 2020 Annual Report.



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# SUSTAINABLE OCEANS & FRESHWATER SYSTEMS



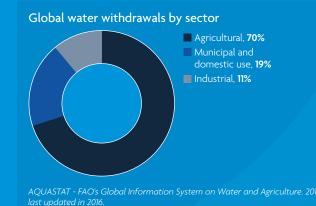
*"Four billion people experience severe water scarcity at least one month of the year"* 

# The challenge

Oceans and freshwater habitats are key for life under water, human wellbeing, and economic activity. Blue economy valuations abound with much focus on the world's oceans, seas, and coasts.

Ocean and freshwater systems form a majority of the planet's surface area, but only 3% is freshwater.<sup>60</sup> Agriculture is responsible for nearly 70% of freshwater withdrawal globally, after which approximately 19% is industrial, and 11% for municipal and domestic use.<sup>61</sup>

Currently, two-thirds of the global population – four billion people – experience severe water scarcity at least one month of the year<sup>62</sup> and nearly half are expected to face severe water stress by 2030 if water use and pollution fails to be decoupled from economic growth.<sup>63</sup> If this occurs, it will force governments to undertake US\$155 billion of additional spending per year on upstream water supply.<sup>64</sup>





CASE STUDY

## A solutions lens

Solutions for oceans and freshwater systems revolve around reducing water intensity and pollution. This can include process efficiencies and other innovations which reduce unnecessary water withdrawals or which prevent and/or collect harmful waste and effluents, such as microplastics or excess nitrogen and phosphorus effluents from sewage discharge and fertiliser run-off. This can range from innovators which seek to solve humanity's impact on the water cycle, to long-established municipal water treatment and purification companies. Restoration of aquatic ecosystems brings environmental and social benefits, preserving both biodiversity and ecosystem services for future generations to draw from for scientific discoveries, nutrition, drinking water and sanitation, and general wellbeing.

### **Xylem**

Xylem provides technology and services to the water and wastewater industry, delivering solutions along the water value chain of collection, distribution, use and return. It sells products such as water and wastewater pumps, filtration devices, valves, heat exchanges, smart meters and test equipment.

#### **Solutions**

Xylem's products mitigate the effect of humankind on the water cycle by improving their customer's water productivity, quality and resilience. This helps preserve water systems and biodiversity while also assisting clients in adapt to physical climate risks. Products such as Xylem's Sensus Smart Meters provides data to help clients optimise water management and save water.

Xylem's pumps, filtration products, chemical free disinfectant and ultraviolet treatment technologies (Wedeco brand) all play a role in treatment and re-use of water, helping to avoid wastewater release into natural water systems (rivers and seas) prevalent in developing countries and which causes water-borne disease and environmental damage<sup>65</sup>.

1.4bn m<sup>3</sup>

polluted water flooding avoided

Source: Xylem.

Helped customers re-use

3.4bn m<sup>3</sup>

water (equivalent to 2 million Olympic pools)

Xylem explicitly recognises the role its products play as a solution to global water challenges by placing solutions targets within its 2025 "Signature Goals".<sup>66</sup> The company targets the following goals:

- i reduce 3.5 billion cubic meters of non-revenue water;
- prevent over 7bn cubic meters of polluted water flooding communities or entering local waterways;
- iii treat 13bn cubic meters of water for reuse; and
- iv provide at least 20 million people with clean water and sanitation.

# 16.5bn m<sup>3</sup>

water to be saved by 2025 target

# CIRCULAR ECONOMY •





"Higher income countries produce more waste overall and a higher proportion of paper and plastic; greater circularity can help preserve and protect the planet's ecosystems."

# The challenge

The vision of an economy in loops – circularity – was proposed as early as 1976 in a report to the European Commission.

A circular economy adheres to the 3Rs of Reduce, Reuse, and Recycle, with a goal of bringing residual waste, which cannot be reused or recycled, close to zero. Such efforts not only solve the challenge of where to store the waste we produce and the impact on ecosystems of littered forests, rivers, and oceans; it also helps promote the sustainable and efficient use of natural capital resources. Solving waste is foremost a natural capital challenge, whether it be preventing the 11 million metric tons of plastics that enter the oceans annually, or reducing the land needed to produce paper, food, and textiles to reduce pressure on land and water resources, including areas of high biodiversity value. However, it also tends to carry direct and indirect GHG emissions reductions.





## A solutions lens

High quality waste management and recycling services, coupled with innovations that increase efficiency of recycling, are essential to solving this challenge.

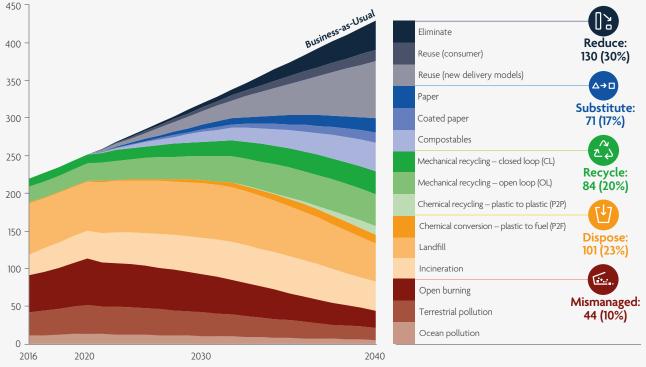
The world produces around 2.1 billion tons of municipal solid waste each year.<sup>67</sup> By 2030, this is expected to grow to 2.59 billion, and by 2050, 3.4 billion.<sup>68</sup> Total waste generation tends to correlate with population and urbanisation levels, and with GDP per capita. The type of waste generated varies with income, as higher income countries produce more waste overall and a higher proportion as paper and plastic.<sup>69</sup> In contrast, lower-income countries produce less waste, most of it is biogenic.<sup>70</sup> This means recycling is likely

to increase in importance globally as economies grow and more people move to cities, increasing the global share of paper and plastic waste.

The report *Breaking the Plastic Wave* recommends reducing plastic waste exports to countries with low collection and high leakage rates by 90% by 2040, in order to meet a Systems Change Scenario for reducing plastic waste. The Systems Change Scenario reduces "rates of annual land-based plastic leakage into the ocean by about 80 per cent (82 ±13 per cent) below projected BAU levels by 2040, while delivering on other societal, economic, and environmental objectives."<sup>71</sup>

#### Plastic fate in the System Change Scenario: a 'wedges' analysis

There is a credible path to significantly reduce plastic leakage to the ocean but only if all solutions are implemented concurrently, ambitiously, and starting immediately



This "wedges" figure shows the share of treatment options for the plastic that enters the system over time under the System Change Scenario. Any plastic that enters the system has a single fate, or a single "wedge." The numbers include macroplastic and microplastic.

#### Million metric tons per year



### **Republic Services**

Republic Services is one of the largest recycling and non-hazardous solid waste collection and disposal companies in the United States. Its operations include 73 recycling centres.<sup>72</sup> 100% of its active landfills are regenerative, which means they capture methane for use in gas-to-energy plants or for thermal conversion (reducing its global warming potential by 96%).<sup>73</sup>

#### **Solutions**

Republic Services handles about 103 million metric tons of waste each year,<sup>74</sup> including nearly six million tons of recyclable materials.<sup>75</sup> In 2020, it recycled 5.1 million metric tons (85%) and composted 0.72 million.<sup>76</sup> It also collected 292 tons of electronic waste, of which it recovered over 99% through recycling.<sup>77</sup>

Republic Services is important locally, but also in terms of global waste management. The United States is the second highest generator of municipal solid waste (MSW) globally and among the top five highest average per capita. Statistically about 13% of this is plastic waste.<sup>78</sup> Historically, the waste Republic did not handle itself was sold primarily to domestic commodity buyers, and from late 2019 it took a step forward to fully eliminate plastics exports to all overseas markets.<sup>79</sup> Overall, it exports less than 1% of processed materials (entirely cardboard) to China.<sup>80</sup>

In 2020 Republic Services commissioned an independent report on its actions for advancing plastics recycling in response to stakeholder engagement. The report identifies challenges limiting the growth of plastic recycling in the US, where just 59% of households have direct access to collection programs and only 17% of plastic containers and packaging are recycled nationally,<sup>82</sup> making recommendations for how Republic can contribute. This includes innovation and investment in its operations, consumer education campaigns, and support for responsible public policy initiatives. To these ends, Republic has invested in the installation of optical units with near-infrared technology and cameras which can rapidly identify and sort recyclable materials,<sup>83</sup> consumer education campaigns such as Recycling Simplified, and expressed support for policy such as mandating minimum post-consumer recycled content for fibre and plastic packaging,<sup>84,85</sup> such as California's AB-793 Bill, which requires 50% post-consumer recycled content by 2030.86

"Republic Services does not believe it is good public policy to export recovered plastic material to the developing world and is committed to not doing so."<sup>81</sup>

#### CIRCULARITY:

US\$63 million

invested in 91 projects to improve plastics recovery over 2017–20<sup>87</sup>.

#### CLIMATE ACTION:

13,346,529 tCO<sub>2</sub>e

emissions savings. 100% of active landfills regenerative.

#### CIRCULARITY:

5.1 million metric tons

of materials recycled in 2020. It is committed to increasing the recovery of key materials by 40% on a combined basis by 2030, 2017 baseline.<sup>88</sup>

The Jupiter Ecology Fund seeks to generate long term capital appreciation and income by investing in securities which we believe contribute to a return of our planet to an ecological equilibrium.

In addition to seeking robust returns for clients, our investment approach also allocates capital resources to efficient and transformational technologies. We also exercise active ownership, through voting and both direct and collective engagement activity.

#### Selected fund-level ESG data

Jupiter Ecology Fund I Acc

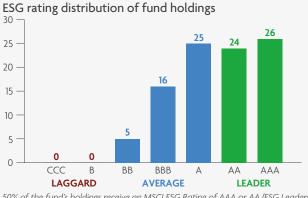
Source: RepRisk, portfolio as at 31.03.2021.

Peer Group: IA Global Country: Region: UK



UNGC violations

Jupiter's fund-manager led approach allows us to undertake a particularly active, independent approach in this area. With the exception of areas outlined in our screening policy the datapoints below are not areas expressly targeted by the fund, but rather serve to provide a representative illustration of our portfolio ESG profile at the time under review (as at 31st March 2021, unless otherwise specified). For further details, please refer to the most recent Jupiter Stewardship Report on our website, and the Environmental Solutions Eurosif Transparency Code.

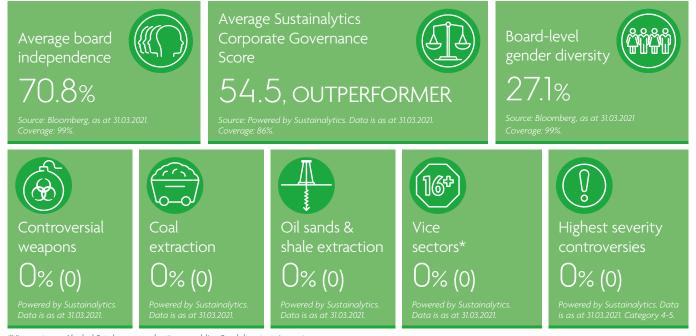


50% of the fund's holdings receive an MSCI ESG Rating of AAA or AA (ESG Leaders) and 0% receive an MSCI ESG Rating of B or CCC (ESG Laggards)

Peer and global rank		Global rank	Peer r
The fund ranks in the 99th percentile within the Mixed Asset EUR Bal – Global peer group and in the 98th percentile within	0	50	100
the global universe of approximately 34,000 funds in coverage.		98th	99th

Ratings should not be taken as a recommendation. Source: MSCI, as at 31.03.21. MSCI ESG Fund Ratings are for informational purposes only and are subject to the Notice & Disclaimer found at: https://www.msci.com/notice-and-disclaimer; and MSCI Inc's and MSCI ESG Research LLC's terms of use at: https://www.msci.com/terms-of-use and additional-terms-of-use-msci-esg-research-llc.

#### Jupiter Ecology Fund



\*Vice sectors = Alcohol & tobacco production; gambling & adult entertainment.

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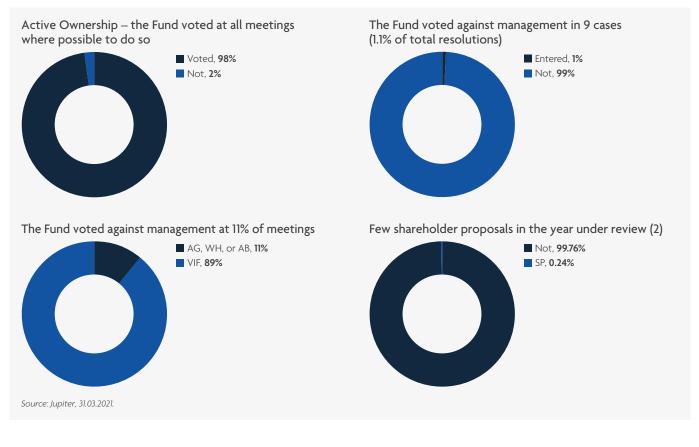
Peer rank

## **Evidencing outcomes**

### Voting

Between 1st April to 31st March 2020-2021, the team voted at all shareholder meetings where it was possible to do so (60/61), only not voting in cases where a power of attorney could not be acquired, due to administrative and extraordinary reasons (Covid-19). A vote of against, withhold, or abstain was entered at 11.5% (7) meetings, and amongst all votable items at each meeting 1.1% (9) were entered against the recommendations of management. There were two shareholder proposals in the period, all relating to corporate governance matters. We interpret these figures as an attribute of our thematic solutions and ESG allocation approach: the high threshold for entry into the portfolios means meetings at which we stand at odds with the management team are relatively rare.

However, we do not hesitate to exercise active ownership, particularly when it relates to our environmental objectives.



## A selection of our significant votes

#### Xylem, May 2020. Shareholder rights.

We supported a shareholder proposal to reduce the ownership threshold for calling special meetings.

#### Borgwarner Inc, April 2020, Bylaw amendments.

We decided to vote against a shareholder proposal requesting the company require shareholder ratification of all bylaw amendments, including for administrative purposes, as we felt shareholders already held effective recourse in this area.

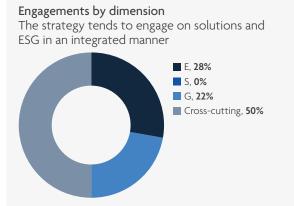
#### Engagement

Engagement is a central aspect of our solutions and ESG integration, serving as an another way in which we can contribute to our environmental objectives and represent client interests through efforts to influence company behaviour.

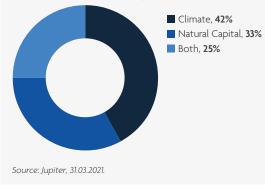
During the year under review the team engaged with multiple portfolio holdings, often as part of repeated long-term dialogue. The team also played an active role in a collective engagement initiative focused on salmon aquaculture producers led by the FAIRR Investor Network, has engaged with underwriters to promote the green bond principles and with sovereign issuers to better incorporate Just Transition.

As described above, our engagement focuses for the coming year will include an increased emphasis on ensuring portfolio holdings have committed to net zero and set robust, externally verified mitigation targets.

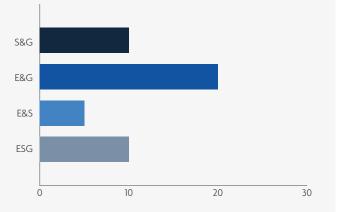
#### An Overview of Our Engagement



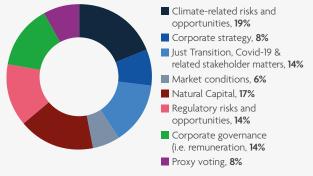
Similarly, our engagements as related to our environmental objectives tend to take place in a cohesive manner



Distribution of our integrated engagements by dimensions discussed (%)



Distribution of specific solutions and ESG themes discussed in our engagements



#### **Collective engagement**

#### Managing biodiversity and climate risks

In 2021, the Jupiter Ecology Unit Trust strategy increased its involvement with the FAIRR Initiative as active participants in a collective engagement focused on the climate and biodiversity risks of feed sourcing for salmon aquaculture. The engagement, Managing Biodiversity & Climate Risks in Feed Supply Chains, will run for three years in total and encourages companies to develop a strategic, science-based approach for the diversification of feed ingredient sources to better manage climate and other ESG risks associated with sourcing wild forage fish and soy.

#### Outcome:

The engagement remains ongoing. However, so far we have participated in collective investor calls with two former investee companies. We have also actively contributed to the shaping of investor letters sent out to target companies.

#### What is FAIRR?

The FAIRR Initiative is a global network of investors which seeks to provide research and collective engagement opportunities on ESG risks in protein supply chains. Jupiter joined in 2019 led by the Environmental Solutions team. FAIRR was founded in 2015 by the CIO/Chairman of a leading global investment firm in the private equity secondary market as part of philanthropic activities of the Jeremy Coller Foundation. Its current collective member AUM is US\$40 trillion.



32 jupiteram.com

CASE STUDY

#### Engaging on the UN Global Compact (UNGC)

#### Due diligence around human rights and sustainable procurement

Umicore is a global materials company active in EV battery materials and recycling. It reports 77% of revenues as directly linked to these solutions areas. Our investment in the company is thus informed by its contribution to our green mobility theme. After our investment, however, the company received a 'potential UNGC flag' from ESG data provider RepRisk (see box), indicating there is risk the company may be in breach of the Compact via incidents occurring in the supply chain. Following is an engagement case study of how our team identified and responded to this risk, providing an example of how the strategy engages in portfolio monitoring and response when such situations arise.

**RepRisk** is an ESG data provider which utilises AI and machine learning to scrap negative media, public documents and other resources across countries and languages to specific companies, allowing investors to understand related risks. It excludes company self-reported news and thus provides an outcomes perspective of company impact distinct from ESG data providers which focus more on company disclosures.

#### The Case:

Umicore received a potential UNGC flag from the data provider in December 2019, alongside the publication of a media report considered to be both severe and from a source of high influence. The report concerned a lawsuit filed by US NGO International Rights Advocates (IRA) against Apple, Google, Dell, Microsoft, and Tesla related to the artisanal and small-scale mining (ASM)<sup>89</sup> of cobalt in the Democratic Republic of Congo (DRC). The lawsuit alleged the involvement of ASM, including child labour, in unsafe conditions at various cobalt mines within the DRC. Though Umicore was not amongst the defendants, it was named in the text of the lawsuit as one of several intermediary companies which reportedly processed cobalt from mines considered at issue in the case.

#### Our Response:

Our monitoring processes noticed the potential flag very soon after its appearance on the ESG data provider. The first step was to ensure we had carried out sufficient due diligence prior to investing. Reviewing our research and engagements pre-investment and prior to the potential flag appearing on the ESG data provider, we were able confirm that this was a risk of which we were aware – 70% of the world's cobalt is mined in the DRC<sup>90</sup> – and had carried out relevant checks, including a review of the company's Sustainable Procurement Framework, a 2018 Due Diligence Compliance Report audited by PwC, and a meeting with IR to discuss remaining questions. In fact, an item that particularly drew our attention to the company was its view of sustainable sourcing as part of its identity and thus an objective to which it expressed enduring commitment despite it not necessarily serving as a competitive advantage to date. From a policy standpoint, we also confirmed that Umicore has a long-standing policy dating back more than fifteen years which prohibits the sourcing from ASM mining in its supply chain.<sup>91</sup>

The next step was then turning to the situation at hand and the evidence available: reviewing the document filed by the NGO that was referenced in the report cited by the ESG data provider. Our assessment found that the timing of Umicore's contracts with relevant suppliers referenced in the documentation did not appear to line up with the timing of the representative cases mentioned by the document. Alongside the company's strong policies, this helped to reassure us that a breach was unlikely to have taken place. Lastly, we continue to engage and monitor the situation, and for example asked further questions about supply chain sustainability in an interim results call with CFO and IR in early 2021. We will continue to monitor and bring up this topic in future conversations with the company.

# APPENDIX

#### **EU Taxonomy Mapping**

There is considerable overlap between our themes and the EU Taxonomy due to similarities in the objectives, philosophy and approach. The table below provides a provisional outline of the relationship between our Themes and the EU Taxonomy.

					PRIMARY	SECONDARY
	JUPITER ENVIRONMENTAL SOLUTIONS THEMES					
EU Taxonomy Objectives	Clean Energy	Green Mobility	Green Buildings & Industry	Sustainable Agriculture & Land Ecosystems	Sustainable Oceans & Freshwater Systems	Circular Economy
<b>1.</b> Climate change mitigation						
<b>2.</b> Climate change adaptation						
<b>3.</b> The substainable use and protection of water and marine resources						
<b>4.</b> The transition to a circular economy					1	
5. Pollution prevention and control						
<b>6.</b> The protection and restoration of biodiversity and ecosystems						

# REFERENCES

- More detail of Carbone4 methodology can be found here CarbonImpactAnalytics\_ November18.pdf (carbone4.com).
- Induced emissions are emissions actually emitted by a firm across all three scopes. It is 2 also often referred to as a carbon footprint.
- Carbone4 measures avoided emissions compared to a reference case (when the reference case is less favourable) or is due to improvement in operations' carbon intensity. The calculation of emissions savings is defined on a case-by-case basis for each sub-sector.
- 2020 Environmental Sustainability Report (microsoft.com) p.18.
- 2020 Annual Report, p.108.
- Niinimaki et al, 2020 (PDF) The environmental price of fast fashion (researchgate.net). Global Greenhouse Gas Emissions Data, United States Environmental Protection Agency, 2021.
- 8 Net Zero by 2050, IEA, May 2021.
- Company estimates. https://orsted.co.uk/about-us/our-company/vision-and-values. 2014 IPCC Report, Summary for Policymakers p.9; https://www.ipcc.ch/site/assets/ uploads/2018/02/ipcc\_wg3\_ar5\_summary-for-policymakers.pdf. 10.
- 11. IPCC Ch.8 Transport, P.606 ipcc wg3 ar5 chapter8.pdf.
- 2019 UK Greenhouse Gas Emissions, Final Figures (publishing.service.gov.uk).
- https://www.london.gov.uk/sites/default/files/air\_quality\_in\_london\_2016-2020\_ 13. october2020final.pdf.
- 14.
- IIGCC Changing Gears Report Changing Gear: Alignment of major auto manufacturers with the goals of the Paris Agreement 2DII (2degrees-investing.org). Aptiv | Electrical Distribution Systems. 15
- Why are fossil fuels so hard to quit? (brookings.edu). 16
- Aptiv | E-Mobility 17.
- 18. Electric vehicle (EV) drivetrain system - Infineon Technologies.
- How Do Electric Cars Work? | Electric Engines Explained | EDF (edfenergy.com).
  Battery Management System (BMS) Infineon Technologies.
- Battery Management System (BMS) Infineon Technologies. 21.
- 22. BHow 'aggressive' railway expansion could cut emissions in eight charts (carbonbrief.org). 23. Rail – Analysis - IEA.
- 24. How 'aggressive' railway expansion could cut emissions in eight charts (carbonbrief.org).
- 25. How 'aggressive' railway expansion could cut emissions in eight charts (carbonbrief.org) 26. Knorr-Bremse gets Manufacturing Execution System: Tasks and Customer Benefits
- (astimobilerobotics.com).
- Z. DRST200005\_CSR\_Bericht\_2019\_EN\_01\_Umschlag,indd (knorr-bremse.com) p .28.
  28. DRST200005\_CSR\_Bericht\_2019\_EN\_01\_Umschlag,indd (knorr-bremse.com) p .28 (2019) SR p. 28).
- 29. DRST200005\_CSR\_Bericht\_2019\_EN\_01\_Umschlag.indd (knorr-bremse.com) p.32. 30. 2014 IPCC Report, Summary for Policymakers p.9 https://www.ipcc.ch/site/assets/
- uploads/2018/02/ipcc\_wg3\_ar5\_summary-for-policymakers.pdf. CBI Buildings Background Paper p.11 https://www.climatebonds.net/files/files/ 31 standards/Buildings/Low%20Carbon%20Buildings%20Criteria%20Background%20
- Paper.pdf.
- ipcc\_wg3\_ar5\_chapter10.pdf p.750. 33. ipcc\_wg3\_ar5\_chapter10.pdf p.750.
- 34. CBI Buildings Background Paper p.11 https://www.climatebonds.net/files/files/
- standards/Buildings/Low%20Carbon%20Buildings%20Criteria%20Background%20 Paper.pdf. 35. CBI Buildings Background Paper p.11 https://www.climatebonds.net/files/files/
- standards/Buildings/Low%20Carbon%20Buildings%20Criteria%20Background%20 Paper.pdf.
- 36. About Us A.O. Smith (aosmithinternational.com).
- AP-GfK Poll: About half of Americans confident in tap water (apnews.com).
  2020 CRS Report A. O. Smith Corporation.pdf (aosmith.com).
- 39. CNBC Catalyst series features Schneider Electric's Chris Leong (wherewomenwork.com)
- 40. Low Voltage Electrical Meters | Power Metering | Schneider Electric UK (se.com). 41. Valve Actuators and Valves | Schneider Electric UK (se.com).
- 42. EcoStruxure: IoT Internet of Things | Schneider Electric Global (se.com)
- 43. files (schneider-electric.com).
- 44. EcoStruxure™ Ensures Steel Quality for ArcelorMittal | Schneider Electric UK (se.com).
- 45. 2019 IPCC Special Report on Climate Change and Land Summary for Policymakers Special Report on Climate Change and Land (ipcc.ch).

- 46. The Investor Guide to Deforestation and Climate Change, Ceres 2020 p.6. 47. https://www.carbonbrief.org/video-how-beef-farmers-can-reduce-their-carbonfootprint.
- 48. IPCC 2014 & 2019.
- 49. The Investor Guide to Deforestation and Climate Change, Ceres 2020 p.6.
- 50. Agriculture and climate change (mckinsey.com).
- UN projects world population to reach 8.5 billion by 2030, driven by growth in 51. developing countries - United Nations Sustainable Development.
- 52 Goal 2: Zero Hunger – United Nations Sustainable Development.
- 53. breakingtheplasticwave\_mainreport.pdf (pewtrusts.org) P. 112. 54. Chain of Custody (CoC) Certification (fsc-uk.org).
- 55. Plant-based alternative protein products | DSM
- Replacing fish with algae | DSM.
- 57. Replacing fish with algae | DSM.
- 58. Optimize® 400 | Novozymes Microbial inoculants for soybeans in Europe | Novozymes.
- Investor brief Managing Biodiversity & Climate Risks in Aquafeed | FAIRR.
  What is Freshwater and Where is it Found? (worldwildlife.org).
- www.fao.org/aquastat/en/overview/methodology/water-use. 61.
- Four billion people facing severe water scarcity | Science Advances (sciencemag.org). 62.
- 63. Half the World to Face Severe Water Stress by 2030 unless Water Use is "Decoupled" from Economic Growth, Says International Resource Panel (unep.org).
- Half the World to Face Severe Water Stress by 2030 unless Water Use is "Decoupled" from Economic Growth, Says International Resource Panel (unep.org). 64
- 65. Wastewater: Sustainable Development Knowledge Platform (un.org). 66
- xylem-sustainability-report-2020.pdf.
- 67. What a Waste Global Database | Data Catalog (worldbank.org).
- 68. What a Waste Global Database | Data Catalog (worldbank.org) p.24. 69. What a Waste Global Database | Data Catalog (worldbank.org) p.29.
- 70. What a Waste Global Database | Data Catalog (worldbank.org) p.29.
- breakingtheplasticwave\_mainreport.pdf (pewtrusts.org) p. 10. RSG Investor Deck May 2021 (republicservices.com). 71.
- 72.
- 73. Republic Services 2020 Sustainability Report 73695b7a-a810-4ce2-8606-b5b13f885b74 (republicservices.com).
- 74. cee6e43a-65ae-43f9-8304-b9cb19d04178 (republicservices.com) SASB Report p.10. Republic Services: Advancing Plastics Recycling through Investment, Innovation and Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.20. 75.
- cee6e43a-65ae-43f9-8304-b9cb19d04178 (republicservices.com) SASB Report p.9. 76.
- cee6e43a-65ae-43f9-8304-b9cb19d04178 (republicservices.com) SASB Report p.9. 77.
- What a Waste Global Database | Data Catalog (worldbank.org) p. 20 & p. 30.
- Republic Services: Advancing Plastics Recycling through Investment, Innovation and Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.26.
- 80. Republic Services: Advancing Plastics Recycling through Investment, Innovation and Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.26. Republic Services: Advancing Plastics Recycling through Investment, Innovation and 81.
- Education (2020). Report commissioned by Resource Recycling Systems (RRS). p. 16. Republic Services: Advancing Plastics Recycling through Investment, Innovation and
- Education (2020). Report commissioned by Resource Recycling Systems (RRS). p. 4 & p. 15. 83. Republic Services: Advancing Plastics Recycling through Investment, Innovation and
- Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.20.
- Republic Services: Advancing Plastics Recycling through Investment, Innovation and Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.29. 85. Global-Commitment-Document-to-download-on-website-2.pdf
- (ellenmacarthurfoundation.org).
- 86. Republic Services Issues Recycling Report Requested by Investors As You Sow. 87.
- Republic Services: Advancing Plastics Recycling through Investment, Innovation and Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.23. 88. Republic Services: Advancing Plastics Recycling through Investment, Innovation and
- Education (2020). Report commissioned by Resource Recycling Systems (RRS). P.25. 89. Raw Materials Information System (europa.eu).
- 90. The DRC Mining Industry: Child Labor and Formalization of Small-Scale Mining | Wilson Center
- 91. Umicore confirms its commitment to ethical and sustainable cobalt | Umicore.

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