

The background of the entire page is a photograph of several wind turbines on a hill. The scene is captured during sunset or sunrise, with a warm, orange and yellow glow in the sky. The turbines are silhouetted against the bright sky, and their long blades are visible. The overall mood is serene and sustainable.

# IMPACT

## REPORT 2021

SUSTAINABLE ENERGY FUND

For the year ending December 2020

Jonathan Waghorn  
Will Riley, CA  
Jamie Melrose, CFA, CAIA

**GUINNESS**  
ASSET MANAGEMENT

# CONTENTS

- 3. EXECUTIVE SUMMARY
- 4. INTRODUCTION FROM THE INVESTMENT TEAM
- 5. FUND PHILOSOPHY
- 7. MAPPING TO THE SDGS – THE SUSTAINABLE ENERGY FUND AND UNIVERSE
- 12. IMPACT OF THE COMPANIES IN THE GUINNESS SUSTAINABLE ENERGY FUND
- 10. ENGAGEMENT BY THE GUINNESS SUSTAINABLE ENERGY INVESTMENT TEAM
- 22. APPENDICES
- 23. APPENDIX 1: IMPACT ALIGNMENT
- 24. APPENDIX 2: SDG MAPPING METHODOLOGY
- 25. APPENDIX 3: BUSINESS ACTIVITY MAPPING
- 27. APPENDIX 4: DISCUSSION POINTS AROUND IMPACT METHODOLOGY
- 29. IMPORTANT INFORMATION

# EXECUTIVE SUMMARY

The Guinness Sustainable Energy Fund invests in companies playing a key role in global decarbonisation, providing a vehicle for investors to align their capital with this positive impact. In this report, we disclose our estimates of the positive impact delivered by companies held in the fund at the end of 2020, based on financial year 2020 data.

In the **first section**, starting on page 7, we discuss our sustainable energy universe construction and how the businesses we seek to invest in map to the UN Sustainable Development Goals (SDGs). We conclude that the portfolio holdings map closest to SDGs 7, 9, 11 and 13. To provide a balanced assessment, we also discuss the business activity of some portfolio companies that detracts from the SDGs.

The **second section** of the report, starting on page 12, assesses the positive and negative decarbonisation impact of the fund holdings. Our estimate and conclusions are as follows:

- i. The companies in our portfolio, at the enterprise level, helped to deliver around 1,400 million kWh of energy savings, 191,000 million miles of electrified travel, 42,000 MW of clean energy capacity and 198,000 GWh of renewable energy generation in 2020.
- ii. The companies in our portfolio sold products and provided services that helped to displace around 705 tonnes of CO<sub>2</sub>e per USD\$1m of portfolio assets. This figure is based on estimates for energy saved, electric miles travelled, and clean energy generated compared to the continued use of incumbent fossil fuel technologies. To put this into context, around 705 tonnes of CO<sub>2</sub>e displaced would be equivalent to planting around 11,700 tree seedlings, providing energy for 85 homes for 1 year, avoiding driving 1.8 million miles, or displacing the consumption of 1,600 barrels of oil.
- iii. In delivering this positive impact, we estimate that the companies in our portfolio generated an annualised 'carbon cost' of around 114 tonnes of CO<sub>2</sub>e per USD\$1m of portfolio assets. Our carbon cost figure is based on scope 1 and 2 (S1+S2) emissions data, adjusted for asset life where available, to provide a comparable annualised negative impact figure.

The **third section**, starting on page 19, explains our engagement framework of Disclosure, Target Setting and Incentivisation with case studies of engagement activity undertaken to support our approach. We also address our engagement activities around negative material operational or ESG concerns and controversial business activity.

Within our **appendices**, starting on page 22, we provide historical and background information on impact alignment, our methodology on SDG and business activity mapping as well as discussion points around impact methodology.

We are mindful that impact reporting is still in its infancy and that there is room for discussion around the approaches adopted. Please note that the estimate for carbon displaced is not equivalent to a carbon offset to Guinness nor our clients. The figure illustrates the extent to which the fund is fulfilling its objective to invest in companies which help facilitate the low carbon transition. The carbon cost figure is also illustrative and distinct from the fund's weighted average carbon intensity. The positive impact is owned by the consumer who purchases the underlying products and services. Throughout the report we have provided detail on the methodologies we have used, including case studies.

# INTRODUCTION

## FROM THE INVESTMENT TEAM

**The Overton window has shifted. An idea that was once mocked is now mainstream. Consumers, companies, and governments worldwide are pushing for the world to transition to a low carbon economy.**

Commenting on the latest report from the UN's Intergovernmental Panel on Climate Change, one of the authors, Piers Forster, optimistically said "If the world can substantially reduce emissions in the 2020s and get to net zero carbon emissions by 2050, temperature rise can still be limited to 1.5 °C. In contrast, UN Secretary-General António Guterres captured headlines with his bluntness, "Today's...report is a code red for humanity".

The momentum we saw in 2020's climate commitments has continued into 2021. The EU published its 'Fit for 55' package outlining a multi-sector policy roadmap, outlining how it plans to reduce carbon emissions by 55% by 2030. With Joe Biden elected to the White House, "America is back"... in the Paris Climate Agreement. And shortly after re-joining, the world's second-largest polluter announced a target to reduce greenhouse gas emissions by 50% by 2030. In the UK, the Conservative government enshrined in law 'the world's most ambitious climate target', to reduce emissions by 78% by 2035. Even Russia and Saudi Arabia have joined in, matching China's commitment to carbon neutrality by 2060. Here, at the end of 2021, we have seen the COP 26 conference in Glasgow increase attention on global decarbonisation.

There is clearly political will to reduce humanity's impact on the planet. This political will must now be translated into action; the IEA recently announced that even if all governments' current net zero pledges were implemented in full and on time, the world would only achieve 20% of the emissions cuts by 2030 needed to keep the goal of net zero emissions by 2050 a possibility. As a result, on IEA estimates, spending on clean energy must triple to reach this goal.

Companies which sell products and services which displace, sequester, or reduce carbon emissions are set to capture an outsized share of future investment whilst helping to contribute towards the longevity of our planet. By delivering concentrated exposure to companies playing a key role in global decarbonisation, the Guinness Sustainable Energy Fund provides a vehicle for investors to align their capital with this positive impact.

Our report starts with an explanation of our fund philosophy, our thoughts on impact investing, and how we align our universe with climate solutions. We then describe our impact findings, focusing on carbon emissions displaced by the products and services of our investee companies, before describing some of the areas of negative impact and controversy within our portfolio.

Impact measurement and reporting is still relatively nascent. We rely on calculations made on a best-efforts basis and many of the figures we produce are proprietary and unaudited. We have included explanations of our methodologies in this report in an effort to guide the reader through the assumptions we have taken.



**Jonathan Waghorn**



**Will Riley**



**Jamie Melrose**



# FUND PHILOSOPHY



## The energy transition is happening

Over the next thirty years, the world will transition towards a sustainable energy system.

The transition will be driven by five key factors:

- **Population and GDP growth:** The UN projects that the world population will increase nearly 25% by 2050, increasing from 7.8bn in 2021 to 9.7bn.
- **Climate change:** As of 2017, the EU-28 and North America accounted for 62% of cumulative carbon emissions since 1751. The pressure will be on developed economies to act first.
- **Pollution:** A Global Alliance on Health and Pollution (GAHP) report found that pollution causes 15% of all premature deaths on the planet. India and China have the most with about 2.3m and 1.8m deaths respectively.
- **Energy security:** The recent spike in fuel prices has brought energy security back into focus. When announcing the UK's zero-carbon electricity target, Boris Johnson said "The only way to strengthen Britain's energy security is zero-carbon power that is generated in this country".
- **Economics:** According to Bloomberg New Energy Finance (BNEF), solar & onshore wind are the cheapest new sources of electricity for least 66% of the world's population, 71% of GDP, and 85% of energy generation.

### What we invest in

The Guinness Sustainable Energy Fund's investment objective is to provide investors with long-term capital appreciation by investing in companies that contribute towards reduced global carbon emissions. Specifically, the fund invests in companies engaged in the generation and storage of sustainable energy, and the electrification and efficiency of energy demand.



### Guinness Sustainable Energy Fund: portfolio by theme (at 31 December 2020)

Theme	Weighting (%)	
1. Electrification of the energy mix	<div></div>	18.6%
2. Rise of the electric vehicle and auto efficiency	<div></div>	18.7%
3. Battery manufacturing	<div></div>	8.0%
4. Expansion of the wind industry	<div></div>	17.4%
5. Expansion of the solar industry	<div></div>	17.7%
6. Heating, lighting and power efficiency	<div></div>	9.9%
7. Geothermal and biomass	<div></div>	6.7%
8. Other (inc cash)	<div></div>	3.0%

Source: Guinness Asset Management

#### What we do not invest in

The strategy excludes companies engaged in:

- The extraction of oil, natural gas and coal; and
- The manufacture of controversial weapons.

The Fund's exclusions are also consistent with the Norwegian Council on Ethics (Norges Bank) exclusion list, which screens out some of the larger fossil fuel utilities, tobacco, and companies which breach globally accepted norms.

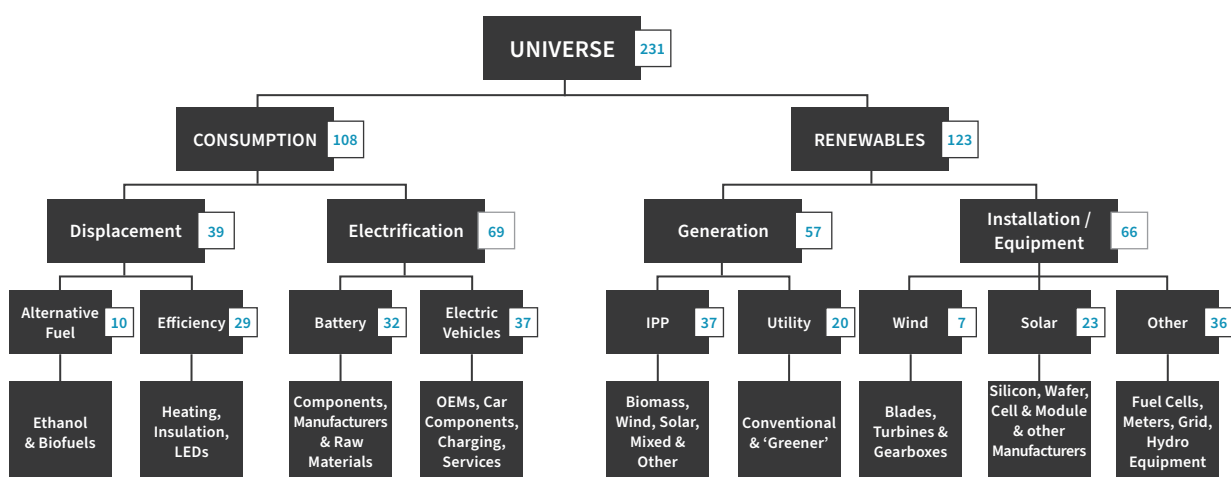
# MAPPING TO THE SDGs - THE SUSTAINABLE ENERGY FUND AND UNIVERSE

## Universe construction

The Guinness Sustainable Energy Fund delivers concentrated exposure to companies in the sustainable energy sector, providing a positive environmental solution for investors' portfolios.

Our investment universe is unique to Guinness. It was first created in 2018 by identifying c.600 companies associated with the energy transition. We screened out c.400 companies due to size, liquidity or relevance, leaving an investible universe of around 230 companies at the end of 2020 (the reference point for this report). We apply our investment process and approach to portfolio construction, resulting in an equally weighted portfolio of 30 positions. We do not limit ourselves to 'pure plays', opening our universe up to some companies with existing conventional fuel exposure, but this must be allied with a commitment to transitioning their business models towards sustainable energy sources. Our universe, at the end of 2020, is summarised below.

## Guinness Sustainable Energy Fund Investment Universe (at 31 December 2020)



Source: Guinness Asset Management

This model has four key sustainable energy subsectors:

- **Displacement:** companies selling products and services which displace energy consumed via improving energy efficiency or providing alternative fuels.
- **Electrification:** companies selling products and services which help to enable electrification of transportation and provide energy stationary storage for the grid.
- **Generation:** utilities and Independent Power Producers (IPPs) with a material proportion of business exposure to low-carbon electricity generation.
- **Installation:** companies involved in installing low-carbon infrastructure, manufacturing finished products (turbines), key components (solar glass), and services (grid connection).

We believe that the companies which fall into these business areas sell products and services which are vital to delivering the transition towards a low-carbon economy. As we can only invest in companies which fall into one of these four verticals, our portfolio is strongly aligned with the positive decarbonising impact associated with these products and services.



## Universe alignment with the UN SDGs

The United Nations Sustainable Development Goals (UN SDGs or SDGs), which are backed up with 169 targets, act as a framework for “peace and prosperity for people and the planet, now and in the future”. They were adopted by all UN member states in 2015 as a blueprint for sustainable development to 2030.

The SDGs have been widely adopted by the private sector as common language for communicating positive (and negative) impact.



We believe that there is strong alignment between our four sustainable energy subsectors and the following four SDGs:



**Displacement** companies provide energy efficiency solutions and services (Targets 7.1, 7.3). **Generation** companies provide low-carbon energy, helping to increase the share of renewable energy in the global grid mix (Targets 7.2).



**Installation** companies install, upgrade, and service low-carbon energy infrastructure, enabling greater adoption of clean technologies (Target 9.4).



**Electrification** companies enable the electrification of mobility, facilitating the transition towards sustainable transport systems (Target 11.2).



Collectively, these companies provide the products, services, and solutions which allow governments to integrate climate change measures into national policies, strategies and planning (Target 13.2).



## Portfolio alignment with the UN SDGs

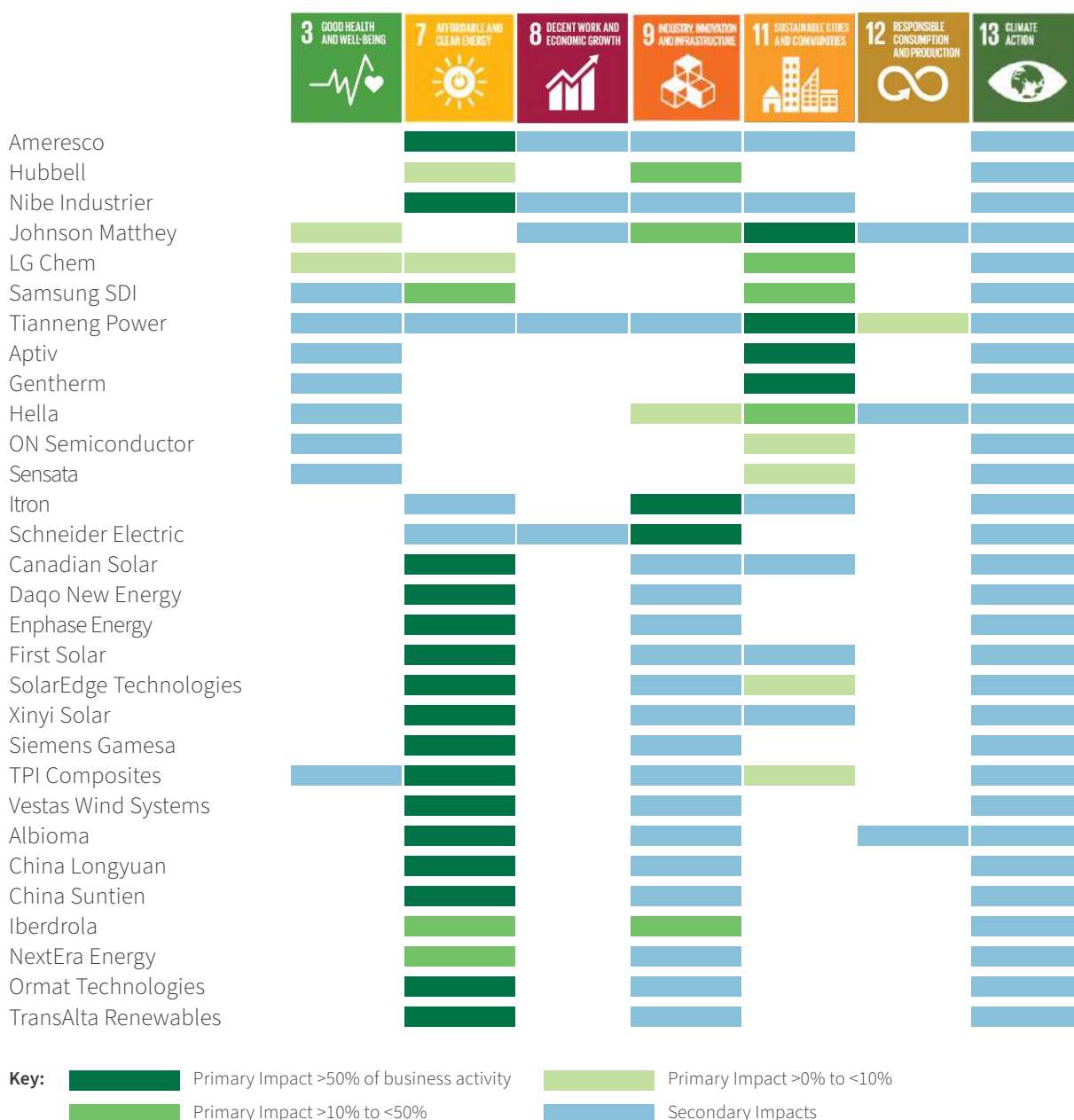
We have conducted an impact mapping exercise, matching up divisional business activity to relevant SDG targets, to understand the impact our portfolio delivers beyond CO2e displacement. Where a company's divisional activity contributes to more than one impact area, we assign the most relevant SDG or target as the division's 'primary' impact and describe the overlapping / other impacts as "secondary" impact.

We do not target these secondary impacts, yet the business activity of some of our portfolio companies also contributes towards the following SDGs:

- **Target 3.9:** Help reduce the number of deaths and illnesses from hazardous air pollution by enabling the electrification of transportation.
- **Targets 8.4 & 11.6:** Improve global resource efficiency and reduce the per capita impact of cities, through providing energy and water efficiency products and services.
- **Target 12.5:** Reduce waste by licensing efficient production processes and recycling batteries, helping to reduce waste generation.

The primary and secondary contributions of our investee companies are shown below.

### Guinness Sustainable Energy Fund: SDG impact mapping (at 31 December 2020)



We are also aware that some of the business activity of companies detracts from the SDGs. When conducting due diligence, we attempt to consider both a company's positive and negative impact, seeking only to invest in companies which we view as having a net benefit to the energy transition. We detail below some of the adverse impacts our portfolio companies have.

Many of our displacement and installation names are manufacturing companies. Some of these companies are diversified with exposure to less desirable end markets. Within the electrification sector, we consider companies involved in the battery and electric vehicle supply chains. Many companies involved in battery manufacturing are chemistry specialists and also generate revenues from synthesizing chemicals or chemical products. For example, LG Chem is one of the world's largest battery manufacturers, but also derives revenues from petrochemicals including plastics.

We consider both utilities and independent power producers within our generation names. Many IPPs and utilities own legacy fossil fuel generation assets, contributing towards increased global carbon emissions and exacerbating the climate crisis. Excluding pure plays, we estimate that 17-50% of business activity across these names involves fossil fuel generation and distribution. We will own these companies on the condition that a major proportion of their business is already dedicated to renewable generation and a clear commitment has been made towards growing this further while phasing out fossil fuels. For example, Iberdrola has grown its renewables capacity by over four times between 2000 to 2020, closed its last coal-fired power station in 2020, plans to invest 91% of its capex in renewables and networks between 2020 and 2025, and is targeting carbon neutrality in Europe by 2030.

## CASE STUDY: NextEra Energy

NextEra Energy claims to be the world's largest generator of renewable energy from the wind and sun, generating nearly 60GWh (49GWh wind, 9GWh Solar, <1GWh landfill gas) in 2020. When combined with the company's nuclear generation of c. 50GWh, the company generates just under of 110GWh of low-carbon energy. However, the company also generates around 110GWh of energy from natural gas (103GWh), coal (4GWh) and oil (<1GWh) which releases carbon into the atmosphere, exacerbating the greenhouse gas effect and contributing towards global warming.

Despite this, we believe NextEra Energy deserves a place in our portfolio for three main reasons:

- **It is growing its low carbon generation faster than its fossil generation:** Fossil generation grew from 90GWh in 2005 to 108GWh in 2020, whereas low-carbon generation has increased from 39GWh to 108GWh over the same period.
- **It is far less carbon intensive than its US peers:** The company's carbon intensity of generation is 47% lower than the US electric power sector, targeting a further reduction of 36% by 2025.
- **It is actively closing down coal capacity:** The company acquired Gulf Power in 2019, increasing its coal capacity from just under 1GW in 2018 to over 2.5GW in 2019. The company pledged to close down these coal facilities and replace them with renewable energy. NextEra Energy's subsidiary FPL has permanently closed just over 2GW of coal capacity since 2015 and now is coal-free in the state of Florida for the first time in 70 years. The company has announced plans to retire three of its four remaining coal plants outside of Florida by 2024.

Despite some of our companies contributing toward negative impacts, we believe that the companies owned in the Guinness Sustainable Energy Fund deliver a net positive impact. Where companies derive less than 50% of sales from sustainable energy, we would look for substantially more than 50% of investment to be going into sustainable energy, meaning that the driver of future growth (and typically therefore the driver of equity value) comes from sustainable energy.







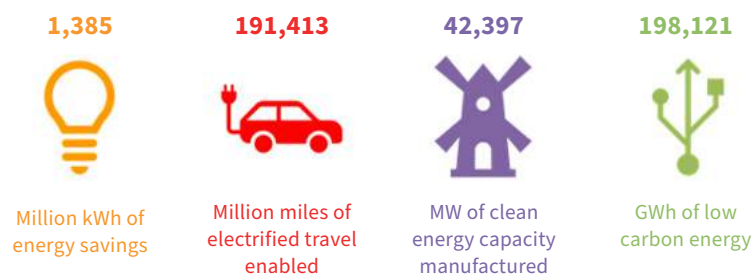
# IMPACT OF THE COMPANIES IN THE GUINNESS SUSTAINABLE ENERGY FUND



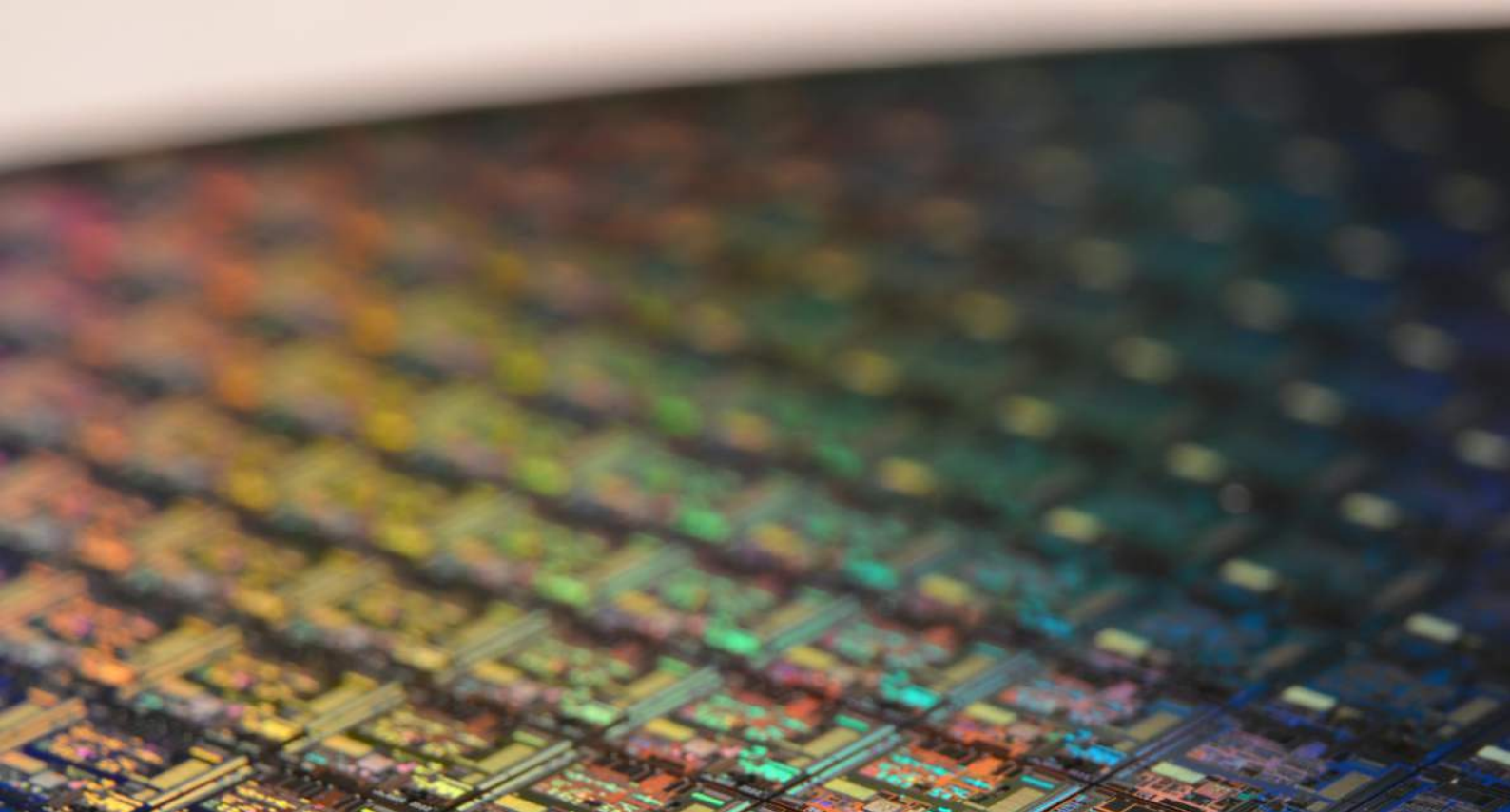
## Aggregate enterprise level impact figures

In this report, we present the positive impact associated with our investee companies by estimating the carbon dioxide emissions displaced and generated through use of their products and services. Please note that these are unaudited figures, which rely on internal estimates.

For 2020, we estimate that in aggregate, the companies in our portfolio achieved all of the following:





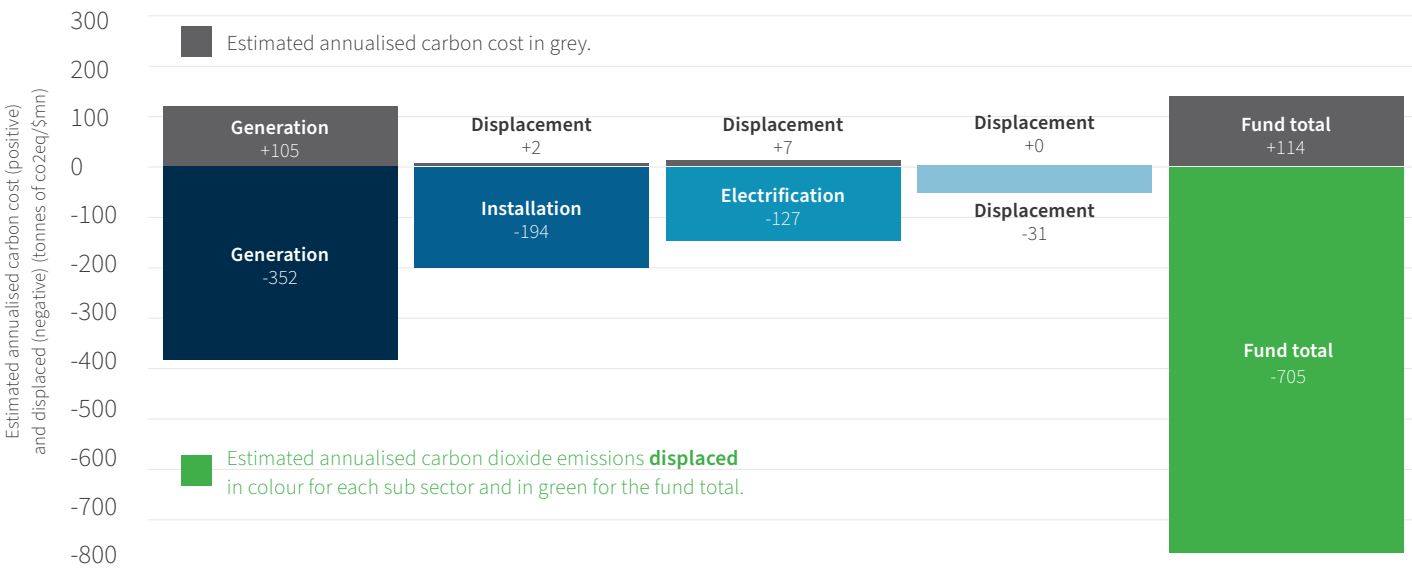


## Annualised carbon displaced per \$1m of portfolio assets

In 2020, we estimate that:

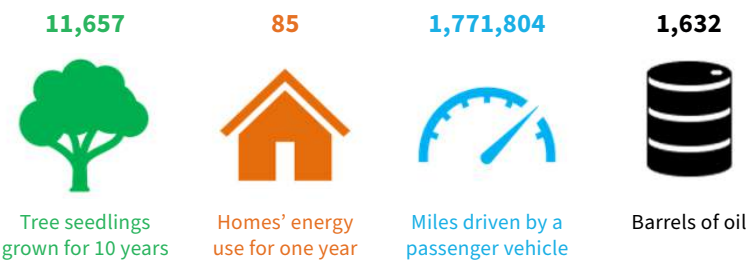
- The annualised carbon cost associated with our portfolio was around 114 tCO<sub>2</sub>e/\$m portfolio assets.
- The annualised carbon displaced associated with our portfolio was around 705 tCO<sub>2</sub>e/\$m portfolio assets.

## Estimated annualised carbon cost vs carbon displaced (tonnes) per \$1m of AuM by sector



Source: Guinness Asset Management

According to the US Environmental Protection Agency, 705 tonnes of CO<sub>2</sub>e is equivalent to one of the following:



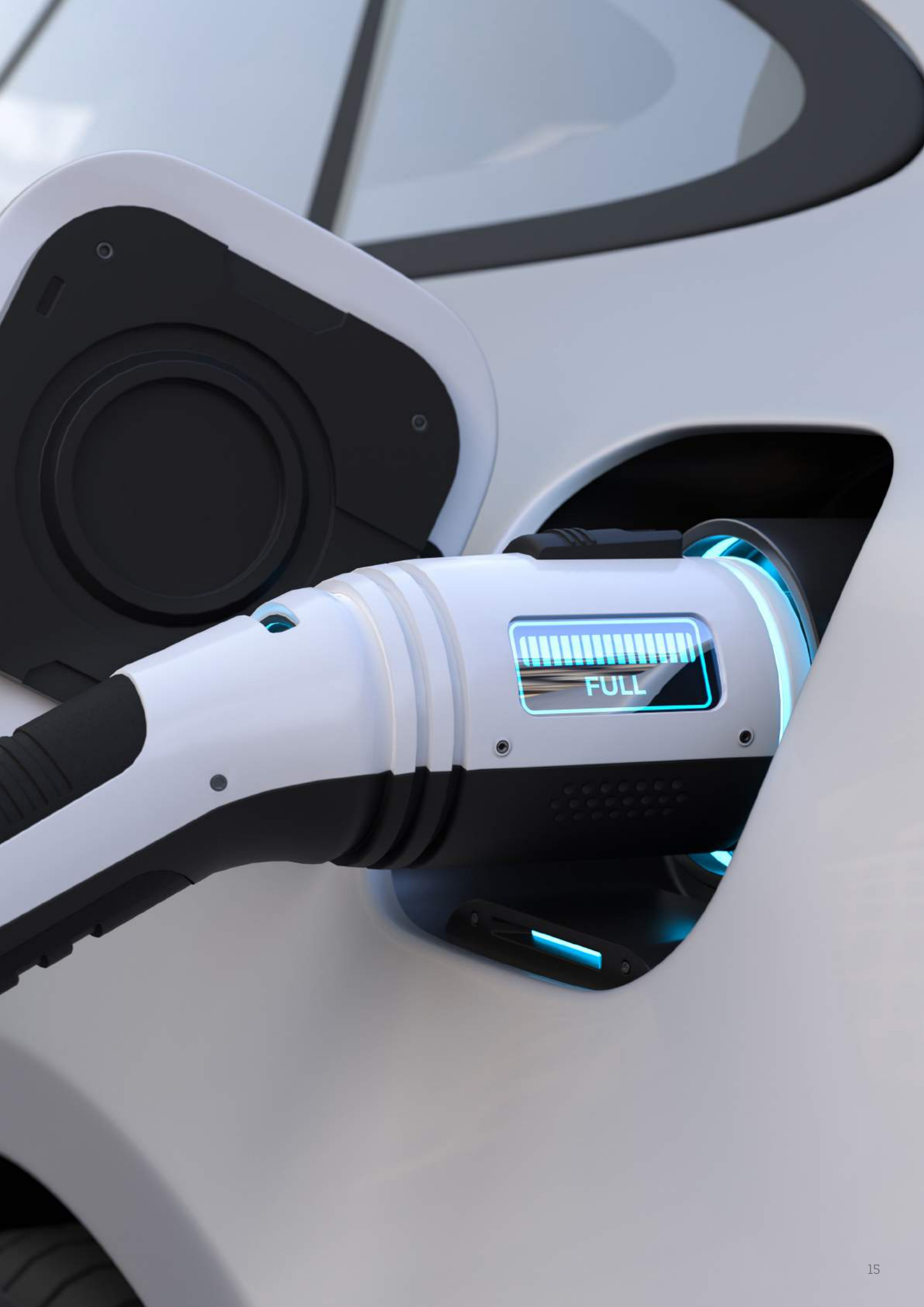
We find it interesting to look behind our headline finding of around 705 tCO<sub>2</sub>e displaced / \$1m of portfolio assets to understand what makes up this figure. Once again, the generation subsector was the largest contributor, accounting for 50% of carbon displaced. Within the generation group, our two Chinese wind names (China Suntien and China Longyuan) once again achieve the highest displacement per US\$ of investment, compared to European and North American generation exposure in the portfolio. This is not particularly surprising given the low valuations of the Chinese names relative to the scale of their generation assets.

Within the installation sector, Canadian Solar was a significant contributor. Canadian Solar is a leading solar photovoltaic module brand, provider of solar energy and battery storage solutions, and developer of utility-scale solar power and battery storage projects. We provide a worked example of Canadian Solar's contribution later in the report. In addition to Canadian Solar, we own two Chinese installation names in the solar module supply chain which also provide good contribution. As these Chinese manufacturing names are fairly energy intensive, and as China's grid is still reliant on coal power generation, these companies have comparatively high scope 1 and 2 emissions. We expect this to improve over time as China decarbonises its electricity grid.



The electrification sector makes up only 18% of the CO<sub>2</sub>e displaced. In our calculation of an EV component company's positive impact, we estimate the number of electric miles it has enabled and then apply a scaling factor based on the product's contribution to the cost of a mid-range electric vehicle. Despite playing vital roles in electric drivetrains, EV components such as semiconductors (Infineon, Onsemi) and high voltage cabling (Aptiv) are typically responsible for just 2-3% of the overall cost of an electric vehicle. For a number of our EV names, this results in a relatively low positive impact contribution, however we expect this sector to make some of the biggest gains in positive impact over the next few years. We talk more about scaling factors in our worked example with Canadian Solar later on in the report.

We note that our headline figure of around 705 tCO<sub>2</sub>e displaced / \$1m of portfolio assets is lower than last year. The main driver behind this was the change in market capitalisations of our portfolio companies over calendar year 2020. As the value of our companies incrementally increases, \$1m represents an incrementally smaller stake in them, and therefore an incrementally smaller stake in the estimated carbon displaced. Stripping out the effect of changes in market capitalisation, the aggregate improvement in positive impact of companies at the enterprise level increased by +17% year-on-year. Other factors which had a smaller effect included: impact improvement or deterioration, portfolio switches, and company data or product life revisions.



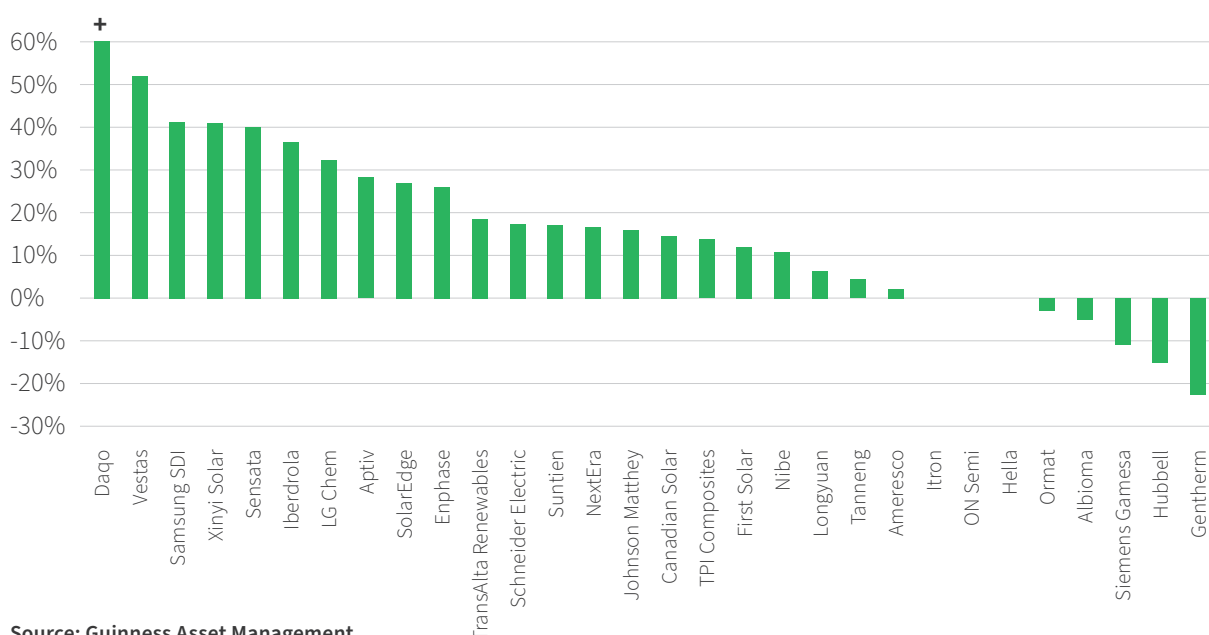
Our calculations described here incorporate the S1+S2 emissions of our investee companies, plus the estimated 'scope 4' emissions displaced through the use of the products and services they deliver. As such, we are not currently including scope 3 emissions in the report. **Please see Appendix 4 for more details.**

## Change in impact versus 2019

We use our own process of measuring and disclosing investee company impact as way to identify companies to prioritise for engagement.

### Percentage change in estimated annualised CO2e displaced by company, 2020 vs 2019

Aggregate portfolio improvement excluding market cap changes = +17%



Source: Guinness Asset Management

Some of the companies which saw the biggest increase in positive impact were Daqo, Vestas, Samsung SDI, Xinyi Solar and Iberdrola.

- **Daqo** saw its external sales volume of polysilicon nearly double in 2020 and rising prices meant that polysilicon became a larger proportion of the solar supply chain cost.
- **Vestas** increased its carbon savings over the lifetime of the MW produced and shipped in the year underpinned by technology improvements and a 35% increase in volumes.
- **Samsung SDI** saw an increase in its positive impact driven by a 75% increase in EV battery shipments and a 44% increase in shipments of batteries for energy storage.
- **Xinyi Solar** increased its PV glass shipments alongside enjoying higher prices. As a result, solar glass was responsible for a larger percentage of the overall cost of solar modules.

- **Iberdrola's** carbon avoided increased by 37% thanks to higher renewable energy production and energy savings & efficiency through green products and services.

This year we identified five companies which saw their positive impact fall year on year: Ormat, Albioma, Siemens Gamesa, Hubbell, and Gentherm. Ormat and Albioma produced less electricity due to lower power demand caused by the pandemic. Gentherm saw a decline in revenue from climate-controlled seats and Hubbell saw a decline in LED lighting sales driven by the unfavourable effects of the pandemic on end markets. Siemens Gamesa saw a drop in MW installed thanks to factory shutdowns and a highly competitive onshore wind market.



In all cases, the observed decline in positive impact was due to temporary fluctuations or the global pandemic rather than changes to corporate strategy. Overall, we are happy that our holdings are well aligned to deliver a positive environmental impact by growing revenues and profits from climate solutions. We will continue to monitor their progress in future reports.

## Impact measurement methodology

### Data collection

We gather relevant operational and environmental metrics for all portfolio companies where data is available or can be reasonably estimated<sup>1</sup>.

### Calculation of company impact

We apply reasonable assumptions to translate the data into an estimate for annualised CO<sub>2</sub>e displaced (positive impact) in the current year. This is increasingly being described in the industry as 'scope 4' emissions. We then apply a scaling factor to revise our impact estimates downwards to reflect the product's contribution to the final impactful product cost.

## CASE STUDY: Canadian Solar scaling factor

Canadian Solar is a leading manufacturer of solar modules which enable solar power generation. In the absence of clean energy technologies such as solar, additional fossil capacity would have been added to generate this energy, leading to higher carbon emissions. We assume that solar generation displaces the equivalent amount of fossil generation and therefore its associated carbon emissions.

However, on its own, solar modules cannot generate clean energy. They require inverters, balance of system (other hardware such as cables, racking systems, wiring, etc. and installation); Engineering, Procurement, and Construction (EPC) costs; and other soft costs (such as design, financing, and margin). It would not be fair to award the solar generation that Canadian Solar has enabled 100% of the emissions displaced by solar generation. We therefore apply a scaling factor. According to BNEF, in 2020 the cost of a utility-scale PV system was \$0.63 per watt. Solar modules made up only \$0.22 per watt of this cost (35%). For Canadian Solar, 35% is our scaling factor.

### Annualising

The S1+S2 emissions of a solar module manufacturer represent the upfront carbon cost which had to be recognised in order to enable 25 years of carbon displacement through solar energy generation. One way of measuring impact would be to subtract the S1+S2 emissions from the emissions displaced by the solar farm over its 25-year operational life. However, we believe a better way of presenting this data is on an annualised basis. We divide both the carbon emitted to create the product (S1+S2 emissions) and the estimated lifetime carbon displaced, by the product's estimated useful product life. This provides an estimate for annualised carbon cost (S1+S2 emissions / product life) and an annualised carbon displaced (lifetime carbon displaced / product life).

### Calculating impact per \$1m of portfolio assets

A holding of \$1m in our equally weighted 30-stock portfolio would result in a \$33,333 holding in each company. We divide that holding by the company's market capitalization to get a percentage share of ownership. We can then multiply this by the annual carbon displaced (positive impact) and annual carbon cost (negative impact) estimates to present an estimate for the investor's owned positive and negative impact per \$1m of portfolio assets. This is then aggregated across all of our portfolio holdings in order for us to present a figure for owned carbon displaced and owned carbon cost per \$1m of portfolio assets.

## WORKED EXAMPLE: Canadian Solar

### Positive Impact (estimated carbon displaced)

**Data collection:** In 2020, CSIQ disclosed that it produced 11.3GW of solar modules.

#### Calculation of company impact:

If 11.3GW of solar capacity was installed and operated for 8,760 hours (24 hours x 365 days) per year at 16.1% capacity factor (IRENA's global weighted average capacity factor for PV in 2020), it would generate 15,917 GWh of clean energy. If we assume that this displaces an equivalent amount of fossil generation (the alternative technology), we estimate that CSIQ's modules would save 12.9 million tonnes of CO<sub>2</sub>e (mtCO<sub>2</sub>e). As discussed earlier, a module represents c.35% of the cost of a utility-scale PV system, so we apply a 35% scaling factor to reach an estimate of 4.6 mtCO<sub>2</sub>e displaced. CSIQ also directly operated 493MWp of solar capacity in 2020. These solar farms could potentially displace another 0.6 mtCO<sub>2</sub>e. Adding these figures together, we reach an estimate for annualised carbon displaced of 5.1 mtCO<sub>2</sub>e.

### Negative Impact (estimated carbon cost)

**Data collection:** In 2020, CSIQ disclosed that it had a carbon intensity of 145 tCO<sub>2</sub>e/MW.

#### Calculation of company impact:

Applying this intensity figure to 2020 shipments of 11,286MW allows us to estimate S1+S2 emissions of 1.6 mtCO<sub>2</sub>e.

### Annualising

A solar module lasts for around 25 years. The positive impact is already annualised, so no further work is required. The upfront carbon cost (S1+S2) which has been recognised to enable 25 years of solar generation is 1.6 mtCO<sub>2</sub>e. The annualised carbon cost is 1.6 mtCO<sub>2</sub>e divided by 25 = 0.06 mtCO<sub>2</sub>e per year.

### Impact per \$1m of portfolio assets

\$33,333 invested in CSIQ (\$3.0bn market capitalization as of 31st December 2020) leads to a 0.0011% ownership stake. If we multiply this stake by the positive and negative impacts, we reach an annualised carbon displaced (positive impact) figure of 55.7 tCO<sub>2</sub>e and an annualised carbon cost (negative impact) figure of 0.7 tCO<sub>2</sub>e generated.





# ENGAGEMENT BY THE GUINNESS SUSTAINABLE ENERGY INVESTMENT TEAM

As a minority shareholder in public equities, we recognise that our engagement ‘clout’ is likely to be limited compared, say, to that of a private equity firm which takes majority stakes in its investee companies.

However, we believe that successful long-term engagement shares parallels with Richard Thaler’s nudge theory; the idea that behaviour and decision making can be influenced through positive reinforcement and suggestions for improvement. We may be a sole actor trying to nudge the company in the right direction, but when multiple actors, either independently or in collectively, nudge in the same direction of positive change, it is far harder for management, industries and governments to ignore.

## Engagement framework

In our engagement efforts, we seek to ensure that the strategies of our portfolio companies are aligned with our goal of owning companies helping to deliver the low-carbon transition. Our engagement framework has three pillars: disclosure, target setting, and incentivisation.

- **Disclosure:** Once a risk is measured, it can be managed through target setting.
- **Target setting:** Once a target has been set, it can be incentivised through remuneration.
- **Incentivisation:** Once a target is incentivised, it is more likely to be achieved.

## Escalation

We often engage and interact with our companies via email, calls and face-to-face meetings. These interactions typically start with a member of investor relations or the management team. Where we have highlighted an issue which we do not think has been given sufficient attention or consideration, we reserve the right to escalate the engagement through voting against management and writing directly to members of the board and the Ccair. Ultimately, if the issue remains unresolved after repeated engagement attempts, we reserve the right to divest.



## CASE STUDY: Disclosure

Gentherm is a world leader in thermoelectrics for the automotive industry. When we first engaged with the company, we asked them if they could provide an estimate for the positive impact from their products. They informed us that they were working on producing their first sustainability report which would contain some of the information we were asking for.

The first sustainability report was released, providing data gleaned from NREL testing which suggested that the company's Active and Vent Climate Control Seats lowered vehicle CO<sub>2</sub>e output by 1.5-4.4 grams per mile. The company also disclosed its scope 2 emissions but had not reported on scope 1 emissions. Following publication of the report, we engaged further, encouraging Gentherm to disclose both their scope 1 and 2 carbon emissions and to consider producing TCFD aligned disclosures. Shortly after, we took part in an investor perception survey, re-iterating that the company's ESG disclosures needed further improvement, especially relating to climate and TCFD.

In the most recent sustainability report, the company disclosed both its scope 1 and scope 2 emissions and has committed to producing TCFD aligned disclosures.

## CASE STUDY: Target Setting

NextEra Energy is one of the cleanest utilities in the USA. In the early 2000's, NextEra made an early move to cut its carbon emissions by seeking to reduce its reliance on oil-fired generation. Since 2005, oil has fallen from c.20% of the company's owned net generation to <0.1%. Over the same period, wind and solar have increased from 6% to 27%. However, the proportion of generation from natural gas has remained stubbornly high at c.45%. This concern was compounded by the lack of longer-term (2030/2050) climate targets (emissions intensity and renewable generation targets).

We started our engagement with NextEra Energy by encouraging the company to report on its climate risk by producing TCFD aligned disclosures. By the time of the AGM, Majority Action heightened our concerns by highlighting that the company was planning to further build out its gas capacity by adding >2,000 MW by 2030. This was backed up by Climate Action 100's benchmark, which suggested that NextEra did not meet the criteria for capital allocation alignment.

We voted against the company's CEO, lead director and auditor because of insufficient climate disclosure and targets, despite the company's past performance on emissions intensity reduction. Shortly after the AGM, the company released a new ESG report. We were pleased to see that they had produced their first TCFD aligned disclosures and committed to participating in the 2021 CDP survey.

We wrote to the company explaining our voting rationale and suggested that they set a new long-term environmental target and have it validated by the Science Based Targets initiative (SBTi). In the meeting that ensued, we thanked the company for progressing its climate disclosures and were reassured that a longer-term target and SBTi verification were being discussed internally. We were assured when we heard that NextEra's CEO did not like net zero targets, preferring the term absolute zero: reaching zero carbon emissions without the use of offsets.

## CASE STUDY: Incentivisation

We have engaged with Ormat a number of times since we first bought the stock in 2007. Ormat is a leading vertically integrated geothermal generation company. The company often provides clear 3-4 year guidance, setting capacity targets for geothermal generation and more recently for battery storage. This guidance is ultimately what is used in analyst models to value the company.



## CASE STUDY: Incentivisation (continued)

Management's ability to meet this guidance is likely to have a strong link to share price performance. These figures also help us to see how the company plans to grow its positive impact (in the form of low-carbon electricity generation) over the coming years.

We believe it makes sense for management remuneration to be linked to these capacity targets, incentivising strong operational execution whilst growing the company's positive impact. When we raised this with company's representatives, they said that they also prefer these operational metrics, but that the Remuneration Committee needed convincing. We followed up this meeting with a letter making a number of suggestions around remuneration, i) linking the equity award with medium term capacity targets, ii) setting a long-term net zero target and linking it to the equity award and iii) setting clear and meaningful stock ownership guidelines.

Shortly after our letter, we were asked to take part in a company feedback exercise where we once again made clear that we would like to see total shareholder return replaced with operational targets and carbon reduction targets in the equity award. This engagement is ongoing, and we hope to have the opportunity to speak with management or members of the remuneration committee about executive incentivisation in the near future.

Beyond engaging to maximise a company's product-based impact, we also engage with our companies on material operational / ESG concerns and controversial business activity. One particular area of focus in 2020 was forced labour in the solar supply chain.

## CASE STUDY: Solar supply chain

In the last year, a number of allegations have been made about the involvement of forced Uyghur labour in the Chinese solar supply chain. Approximately 95% of solar modules rely on solar grade polysilicon, 75% of which comes from China and 45% of which is manufactured in the Uyghur region of Xinjiang. In response to these forced labour concerns, the US has implemented a Withhold and Release Order (WRO), giving customs officials the authority to seize imports from China until the importer proves that no forced labour was involved in their manufacture.

As at 31st December 2020, we held 2 companies potentially affected by this issue: Daqo and Canadian Solar. Since the year-end, we've exited our position in Daqo, meaning that the only relevant remaining position is Canadian Solar.

We have maintained regular communication with the company, seeking to understand how it would deal with a potential WRO before it was enacted, encouraging them to sign up to the Solar Industry Forced Labour Pledge, and asking them to provide the market with reassurance that there is no involvement of forced labour in their supply chain. The company and its representatives have asserted emphatically and repeatedly that there is no forced labour in their supply chain. They have explained that they have only one employee working in Xinjiang, the manager at their solar power plant, alongside six other sub-contractors who are all Chinese. They are aware of the pledge but have not joined as they are wary of the domestic boycott action that H&M, Nike and Uniqlo faced after voicing their concerns. Despite this, at the recent AGM, due to our concerns around poor disclosure, we voted against the CEO-Chair and the Chair of the Audit Committee. Shortly after, they told us that they have engaged third-party supply chain auditors to help provide assurance to shareholders and customers and published a 2020 sustainability report with bolstered "Responsible Supply Chain" disclosures. The engagement is ongoing.



# APPENDICES

1. IMPACT ALIGNMENT
2. SDG MAPPING METHODOLOGY
3. BUSINESS ACTIVITY MAPPING
4. DISCUSSION POINTS AROUND IMPACT METHODOLOGY

# APPENDIX 1:

## IMPACT ALIGNMENT

### History of Impact

Impact investing traces its roots back to Socially Responsible Investing, the practice of avoiding ‘sin’ stocks through screening out companies based on the impact of their products. In the 1960s, the Ford Foundation pioneered program-related investments (PRIs), shifting away from using grants in favour of making low-interest loans to finance programs like urban redevelopment or affordable housing. PRI established the practice of positively screening for investments based on the perceived societal impact of a company’s products, whilst delivering a return of capital. In 2007, the Rockefeller Foundation coined the term “impact investing”, defining it as an activity which seeks to generate social or environmental benefits while delivering a financial return. They stated that two key elements should be present, intentionality and measurement. To date, impact investment has typically involved private market-based project financing. As it has matured, it has started to migrate into public markets, accessing deeper pockets of capital.

### Impact investing in public markets

The discussion of whether a public equities fund can be designated as an impact fund is fraught with controversy, often centring on the concept of additionality: the extent to which desired outcomes would have occurred without the investor’s intervention. Opponents say that ‘true’ impact investing can only occur in primary markets, where the measured positive externality would not have occurred without the new and additive financial resource. Proponents say that ownership matters: additionality can be achieved through engaging with companies and policy makers to raise standards.

We have sympathy for both views. The investor’s contribution towards the impact may be less intense in secondary markets and delivered primarily through engagement rather than through new capital. But just because the form of additionality is different does not necessarily mean it should be dismissed. As a fractional owner of a company, it is nearly impossible to draw a causal link between engaging with a company and behavioural change. However, if a mindful investor contributes to a broader trend or group engagement for positive change, it becomes far harder for management, industries and policymakers to ignore.

### Impact alignment

The Guinness Sustainable Energy Fund intentionally screens for companies selling the products and services which will help to deliver the transition towards a low-carbon economy. When companies and consumers purchase and use these solutions (heat pumps, electric vehicles, renewable energy) over incumbent technologies (gas boilers, internal combustion engines, fossil fuel generation) they contribute towards the global effort to reduce greenhouse gas emissions and combat climate change.

By investing in the companies that produce these products and services, we believe that the fund’s success is closely aligned with this positive environmental impact. This alignment flows through our universe construction, where we deliberately target companies delivering climate solutions; through our reporting, where we measure and report on the carbon avoided and carbon cost of our portfolio; and through our engagement, where the overwhelming focus is on climate action.

# APPENDIX 2:

## SDG MAPPING METHODOLOGY

Where companies have positive exposure to more than one target or goal, we assign the company's revenues first to the goal which we believe is most relevant to them. We describe this as the company's "primary impact", which on our schematic is represented in a green colour. We grade the level of primary impact by the proportion that the relevant activity comprises of the company's overall business activity. We then record other, or 'secondary' areas of positive impact, represented by a light blue colour.

### CASE STUDY: VESTAS

#### Primary impact

We believe that Vestas' wind turbines help to deliver SDG target 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix". In 2020, 86% of its revenues came from onshore wind turbine manufacturing, so we assign 86% of business activity to Goal 7. We believe that this goal and target are most relevant to the division's activity, so it is designated as a primary impact.

#### Secondary impact

We believe that products and services which upgrade and decarbonise energy infrastructure also align with SDG target 9.4 "By 2030, upgrade infrastructure and retrofit industries to make them sustainable...". We consider this to be secondary in relevance to SDG 7, so it is designated as a secondary impact for Vestas.

#### SDG 13: Climate Action

Our mapping work produces the outcome of no primary exposure to SDG 13, 'Climate Action', which appears out of place for a sustainable energy fund. This is because we map business activity to the underlying targets, and the targets for SDG 13 appear to be more aimed at governments, rather than private sector companies. As we believe that all the companies in our universe will contribute "to limit[ing] global temperature rise to well below 2 degrees centigrade", we recognise their contribution as a secondary impact only.





# APPENDIX 3: BUSINESS ACTIVITY MAPPING

SDG	TARGET	RELEVANT BUSINESS ACTIVITIES	COMPANIES
3. GOOD HEALTH & WELL-BEING	3.4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.	Manufacturing diabetes drugs, generic active ingredients (e.g. for opioid addiction therapy).	LG Chem, Johnson Matthey.
	3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents.	Manufacturing systems and components which contribute towards autonomous mobility and advanced safety, such as driver assist, sensors, semiconductors, electronics and software.	Aptiv, Hella, ON Semiconductor, Sensata.
	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Companies playing an active role in the supply chain for cleaner or electrified transport (EVs, e-bikes, e-trikes, e-scooters, e-buses, etc) including: batteries and cathode material, EV thermal management systems, components for hybrids (e.g. 12V, 48V), auto-catalysts, semiconductors and electronic systems for EVs, lightweight composite materials for e-buses.	Johnson Matthey, LG Chem, Samsung SDI, Tianneng, Aptiv, Gentherm, Hella, ON Semiconductor, Sensata, TPI Composites.
7. AFFORDABLE & CLEAN ENERGY	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services.	Involved in the construction, installation, operation and maintenance of hydro, wind, solar, geothermal and biomass energy, including supply chain contributors, companies which provide grid connection equipment, electricity distribution, smart meters and ESS.	Ameresco, Hubbell, LG Chem, Samsung SDI, Tianneng, Itron, Schneider, Canadian Solar, Enphase, First Solar, SolarEdge, Xinyi, Siemens Gamesa, Vestas, Iberdrola, Ormat.
	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.	Companies involved in hydro, wind, solar, geothermal, biomass generation, ESS, energy networks, or other renewable energy technology and their respective supply chains.	Ameresco, Hubbell, Nibe, LG Chem, Samsung SDI, Tianneng, Itron, Schneider, Canadian Solar, Daqo, Enphase, First Solar, SolarEdge, Xinyi, Siemens Gamesa, TPI Composite, Vestas, Albioma, China Longyuan, China Suntien, Iberdrola, NextEra, Ormat, TransAlta Renewables.
	7.3 By 2030, double the global rate of improvement in energy efficiency.	Companies involved in selling energy efficiency products and services such as insulation, LEDs, heat pumps, ESS, smart meters or energy management.	Ameresco, Hubbell, Nibe, LG Chem, Samsung SDI, Tianneng, Itron, Schneider, Enphase, SolarEdge, Ormat.
	7.8 By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support.	Businesses with significant business activity outside of developed markets (North America, Western Europe, Australia, Japan, South Korea), or businesses with a significant presence on island territories which deliver hydro, wind, solar, geothermal and biomass energy, including supply chain contributors, smart grid services, and grid storage.	Daqo, Xinyi, Albioma, China Longyuan, China Suntien, Ormat.
8. DECENT WORK & ECONOMIC GROWTH	8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead.	Licensing technology / processes to industry which enable greater resource efficiency, lower emissions and less waste, energy efficiency projects and equipment, resource measurement and management, recycling, repair and maintenance, projects to improve energy and resource efficiency of industry.	Ameresco, Hubbell, Nibe, Johnson Matthey, Tianneng, Hella, Itron, Schneider, Wasion.

SDG	TARGET	RELEVANT BUSINESS ACTIVITIES	COMPANIES
9. INDUSTRY, INNOVATION & INFRASTRUCTURE	<b>9.4</b> By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.	Upgrading, maintaining, and operating the grid to enable greater uptake of renewable energy, energy efficiency projects and equipment, resource measurement and measurement, recycling, manufacturing clean energy infrastructure such as wind turbines and solar farms along with their respective supply chains.	Ameresco, Hubbell, Nibe, Johnson Matthey, Tianneng, Itron, Schneider, Canadian Solar, Daqo, Enphase, First Solar, SolarEdge, Xinyi, Siemens Gamesa, TPI Composites, Vestas, Albioma, China Longyuan, China Suntien, Iberdrola, Nextera, Ormat, TransAlta Renewables.
	<b>11.2</b> By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.	Electric transportation / batteries for electrified transport and their supply chains, electrical systems and semiconductors which support electrification of transport, battery thermal management, hybrid systems, lightweight composite materials for electric buses.	Johnson Matthey, LG Chem, Samsung SDI, Tianneng, Aptiv, Hella, ON Semiconductor, SolarEdge, Sensata, TPI Composites.
11. SUSTAINABLE CITIES & COMMUNITIES	<b>11.6</b> By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.	Sales of consumer and commercial energy efficiency products which can make homes and offices more aware of consumption (meters) or resource efficient such as insulation, LEDs, heat pumps, etc and companies which deliver such projects. Products which help improve air quality including EVs, e-bikes, e-buses, batteries, auto catalysts.	Ameresco, Hubbell, Nibe, Johnson Matthey, LG Chem, Samsung SDI, Tianneng, Itron, TPI Composites.
	<b>12.5</b> By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.	Manufacture of products using less energy / fewer raw materials, water and gas metering, battery recycling, waste to energy (bagasse biomass). Repair and maintenance services which avoid scrapping of higher value items.	Hubbell, Johnson Matthey, Tianneng, Hella, Itron, Albioma.
12. RESPONSIBLE CONSUMPTION & PRODUCTION			
13. CLIMATE ACTION	<b>13.2</b> Integrate climate change measures into national policies, strategies and planning.	<b>Displacement</b> Reducing energy consumption via energy efficiency and alternative fuels.	Ameresco, Hubbell, Nibe.
		<b>Electrification</b> Reducing transport emissions by transitioning towards battery electric vehicles.	Johnson Matthey, LG Chem, Samsung SDI, Tianneng, Aptiv, Gentherm, ON Semiconductor, Sensata.
		<b>Installation</b> Manufacturing and installing the equipment and infrastructure required to enable low-carbon energy generation.	Itron, Schneider, Canadian Solar, Daqo, Enphase, First Solar, SolarEdge, Xinyi, Siemens Gamesa, TPI Composites, Vestas.
		<b>Generation</b> Increasing the percentage of energy generated from renewable and alternative sources.	Albioma, China Longyuan, China Suntien, Iberdrola, NextEra, Ormat, TransAlta Renewables.

# APPENDIX 4:

## DISCUSSION POINTS AROUND IMPACT METHODOLOGY

### 1. Impact reporting is subjective

This document outlines how the Sustainable Energy team thinks about impact investment. By the nature of the topic, these views can be highly subjective. We debate our own impact methodology internally and with others in the impact community and expect our methodology to evolve as more data becomes available, and as industry standards emerge.

### 2. Does a company need to have good ESG credentials to be an impact investment?

We believe that impact is about the ‘what’, whereas ESG is more about the “how”. That said, we take ESG into account in our investment process. We take a holistic view of our investments, assessing strategy, financials, valuation, ESG and impact – if a company has a compelling strategy, which is attractively valued, and has a product with a strong positive impact, but which has poor ESG, we may reason that the potential reward is worth taking the heightened ESG risk for. We would then track the company’s ESG behaviour, looking for improvement over time.

### 3. How do you account for the impact of the fund changing over time?

The impact of our fund is likely to change over time as a result of changing allocations across our four subsectors (efficiency, electrification, installation, generation), depending on where we think the most attractive returns are available. Changes in company market capitalisations will also have an effect on the impact relative to a specific amount of fund assets. Over time, we are more focused on the impact trajectories of the individual investee companies than the overall portfolio outcome. A material change in strategy at an investee company, leading to a de-emphasis on the division(s) which generate positive impact would cause us to re-visit our investment thesis, and engage with the company to understand the shift.

### 4. Do you take scope 3 emissions into account in your analysis?

Of the GHG protocol’s 15 categories of scope 3 emissions, we believe that two most relevant categories for our portfolio are category 1 (purchased goods & services) and category 11 (use of products sold). Scope 3 reporting is still in its infancy, with most companies not reporting it or only measuring and disclosing some of the 15 categories, but not all of them. This makes quantitative scope 3 analysis challenging. However, we outline some qualitative thinking regarding scope 3 emissions below.

#### Category 1: Purchased goods & service

A number of the companies we own use carbon or energy intensive raw materials in their production processes. This includes steel and cement for wind turbines, polysilicon and glass for solar modules, and the metals used in battery manufacturing. To gain some comfort on this, we look to the total carbon payback period (life cycle carbon emissions / gross carbon emissions avoided per year x 365) for different technologies where scope 3 data is available. In 2020, Vestas, for example, calculated that the turbines it produced and shipped in the year should help to displace 493m tCO<sub>2</sub>e over their lifetime. In the same year, the sum of their disclosed scope 1, scope 2, and scope 3 emissions was 9.9m tCO<sub>2</sub>e. This suggests that over their 20 year lives, Vestas’ turbines displace around 50 times more carbon than is emitted in the manufacturing process. Another way of saying this is that the carbon payback period for a wind turbine is only a matter of months. The carbon payback period is thought to be a little longer for solar, between 1-2 years. In addition to this, BNEF estimates that the average electric vehicle driving time required in order to pay back EV manufacturing emissions is just 1.5 years, or 27,000km. The payback period does vary country by country, though, due to differing carbon intensities of electricity generation. We take some comfort in the knowledge that, despite containing carbon and energy intensive materials, most of the products that our portfolio companies manufacture more than repay their carbon debt over the course of their useful lives.



### Category 11: Emissions associated with product use

Biofuels and biomass are generally considered to be greener alternatives to incumbent fossil fuel-based technologies as they are made from waste or plant-based ingredients which have absorbed carbon whilst being grown. According to current carbon accounting standards, carbon emissions from the combustion of biomass and biomass based products (e.g. ethanol) is accounted for in the land use sector. It is currently treated as being carbon neutral in the energy sector. However, as biomass and biomass based products are typically blended with hydrocarbons and still require combustion to release energy, we believe that they will always be more controversial than non-combustion based technologies such as wind and solar. Despite this, we believe that biofuels and biomass generation will play a key role in the transition to a low carbon economy by helping to reduce emissions and reliance on fossil fuels from 'hard to abate' sectors such as heavy freight, airlines, shipping, and isolated energy networks.



# IMPORTANT INFORMATION

The Guinness Sustainable Energy Fund is an equity fund. Investors should be willing and able to assume the risks of equity investing. Investment in the Funds carries with it a degree of risk and investors should read the risk factors section in the prospectus before investing.

Past performance is not a guide to the future. The value of this investment and any income arising from it can fall as well as rise. This will be as a result of market, currency and exchange rate fluctuations as well as other factors both directly and indirectly related to the stocks in which it is invested.

Shareholders should note that all or part of the fees and expenses will be charged to the capital of the Fund. This will have the effect of lowering the capital value of your investment.

This document is provided for information only and all the information contained in it is believed to be reliable but may be inaccurate or incomplete; any opinions stated are honestly held at the time of writing, but are not guaranteed. The contents of the document should not therefore be relied upon. It is not an invitation to make an investment nor does it constitute an offer for sale.

The full Fund documentation contains more complete and detailed information of risk, fees, charges and expenses that are to be borne by an investor. The documentation should be read carefully before investing. The full documentation needed to make an investment, including the Prospectus, the KIID and the Application Form are available, free of charge, from the Manager: Link Fund Manager Solutions (Ireland) Ltd, 2 Grand Canal Square, Grand Canal Harbour, Dublin 2, Ireland or the Promoter and Investment Manager: Guinness Asset Management Ltd, 18 Smith Square, London SW1P 3HZ. Documentation is also available from the website [guinnessfunds.com](http://guinnessfunds.com).

## **THIS INVESTMENT IS NOT FOR SALE TO U.S. PERSONS.**

The Guinness Sustainable Energy Fund is a sub-fund of Guinness Asset Management Funds PLC (the "Company"), an open-ended umbrella-type investment company, incorporated in Ireland and authorised and supervised by the Central Bank of Ireland. The Funds has been approved by the Financial Conduct Authority for sale in the UK. The Company and the Fund have been recognised in the UK by the FCA pursuant to section 264 of the FSMA. Guinness Asset Management Ltd is authorised and regulated by the Financial Conduct Authority.

The prospectus for Switzerland, the KIID for Switzerland, the articles of association, the annual and semi-annual reports, as well as the list of the buying and selling transactions can be obtained free of charge from the representative in Switzerland, Carnegie Fund Services S.A., 11, rue du Général-Dufour, 1204 Geneva, Switzerland, Tel. +41 22 705 11 77, Fax: + 41 22 705 11 79, [www.carnegie-fund-services.ch](http://www.carnegie-fund-services.ch).

The paying agent is Banque Cantonale de Genève, 17 Quai de l'Île, 1204 Geneva, Switzerland.

Telephone calls to Guinness Asset Management will be recorded.



**GUINNESS**  
ASSET MANAGEMENT