The challenge of net zero

ENDERS | ANALYSIS

Table of contents

Executive summary: the challenge of net zero

Climate change is again a core theme of this year's Media and Telecoms 2023 & Beyond Conference, inaugurated in 2021 when the UK hosted COP26.

Published in March 2023, the IPCC's Sixth Assessment Report[1] points to alarming warming trends due to rising greenhouse gas (GHG) emissions. While 56 'hard pledge' Paris Agreement signatories had laws by 2020 primarily focussed on reducing GHG, including the UK, European Union (EU) and Japan, covering 53% of global GHG, the two largest emitters, 'soft pledge' China and the United States, contributing 38%, did not. Global GHGs will be 10% above 2010 levels by 2030 based on 2022 policy settings.[2] Echoing the messaging of COP26 and COP27, the IPCC implores signatories: "Emissions should be decreasing by now and will need to be cut by almost half by 2030, if warming is to be limited to 1.5°C." Warming will also exceed the upper limit of 2°C by 2100, with 3°C forecast for that year.

The climate crisis is already provoking irreversible changes in the environment, including biodiversity. Ocean sea levels and salinity are rising and currents are slowing. On land, weather conditions are more extreme, especially heatwaves and drought. Warming will cruelly impact the most vulnerable countries in Central and South America, Africa and East Asia by further water and food poverty and insecurity.

With many governments stymied by short-term political exigencies, it is businesses and people that must harbour the ambition for net zero that our planet requires.[3] Mandatory emissions reporting by businesses is required by 'hard pledge' Paris Agreement signatories, galvanising the adoption of plans for emissions reductions aimed at net zero, independently validated by the Science Based Targets initiative (SBTi), as well as reporting to the Carbon Disclosure Project (CDP) for investors and shareholders. Many businesses in 'soft pledge' countries such as the US, are also engaged in voluntary reporting and climate action.

This year's report on the climate change initiatives of TMT companies highlights their adoption of science-based targets to decarbonise operations. Many companies have revised their initial net zero targets for 2030 to the more realistic goal of halving scope 1 and 2 emissions, including by shifting from fossil fuels to 100% renewable energy sources, in line with global climate action objectives, also addressing upstream and downstream emissions (scope 3). Case studies of the *Guardian*, WPP, Ad Net Zero, Bertelsmann, Vivendi, Sky, BT Group, and Virgin Media O2 provide best practice learnings.

This year's report also highlights the society-leading role of media companies on the environment. Media businesses are mobilising their touchpoints with their audiences—from news, to magazines, to audio-visual productions such as films, TV programmes, games and advertising—to inform them of the climate crisis and win their hearts and minds in favour of climate action. It is now accepted that the climate crisis is the greatest challenge to face the world's population and their progeny.

> *"The media help shape the public discourse about climate change. This can usefully build public support to accelerate climate action. In some instances, public discourses of media and organised counter movements have impeded climate action, exacerbating helplessness and disinformation and fuelling polarisation, with negative implications for climate action."*
>
> IPCC, Sixth Assessment Report, page 18

[1] IPCC, Synthesis Report of the IPCC Sixth Assessment Report (AR6), Longer Report, March 2023.
[2] United Nations Climate Change, 2022 NDC Synthesis Report, 26 October 2022.
[3] Net zero accounts for all forms of GHG, including carbon dioxide. We use carbon as shorthand for emissions in this report as businesses report GHG gases as equivalent tonnes of carbon dioxide.

International climate change: ever more alarming

In December 2015, 195 countries signed the Paris Agreement, the first global and binding climate treaty. Signatories are committed to limit warming to below 2°C by 2100, aiming for 1.5°C, relative to pre-industrial levels. Signatories submit five-yearly Nationally Determined Contributions (NDCs), stating their targets, policies, and measures for reducing national greenhouse gas (GHG) emissions, which are processed into a range of emissions pathways for the planet.

The IPCC's 2018 Special Report[4] called for a 45% reduction of global GHG emissions by 2030, relative to 2010, to maintain the target of 1.5°C warming by 2100, a goal affirmed by the Glasgow Summit Pact at COP26 in 2021. However, NDCs submitted for COP27 by September 2022 indicate that global emissions in 2030 will be 10% higher than in 2010. The current lack of ambition explains why climate change is ever more alarming.

The current lack of ambition explains why climate change is becoming ever more alarming

This state of play is summarised in the striking findings of the IPCC's Sixth Assessment Report published in March 2023.[5] First, global surface temperatures from 2011-2020 have risen 1.1°C above 1850-1900 levels, with the 1.59°C increase observed over land higher than the 0.88°C increase over the ocean. Second, this warming of the atmosphere, ocean and land is unequivocally driven by emissions from human activities, with warming from GHGs (carbon dioxide (CO2), methane, and nitrous oxide) partly masked by aerosol cooling. Third, emissions in 2010-19 were higher than in any previous decade, but the 1.3% rate of growth was lower than the 2.1% of the previous decade. This is a hopeful indication that growing awareness of climate change and mitigation policies are having a meaningful, if insufficient, impact on the level and rate of growth of global emissions.

Global emissions are due to the energy sector (34%), industry (24%), agriculture, forestry and other land use (22%), transport (15%) and buildings (6%). Net zero by 2050 requires the almost complete cessation of emissions and the use of carbon sinks and engineered removals for unavoidable emissions beyond that year. An easy win is decarbonising the supply of electricity by low-emission technologies such as wind and solar, which also enables the electrification of vehicles powered by lithium-based batteries.[6] Industry and agriculture are harder to decarbonise. The IPCC warns of hard limits being reached.

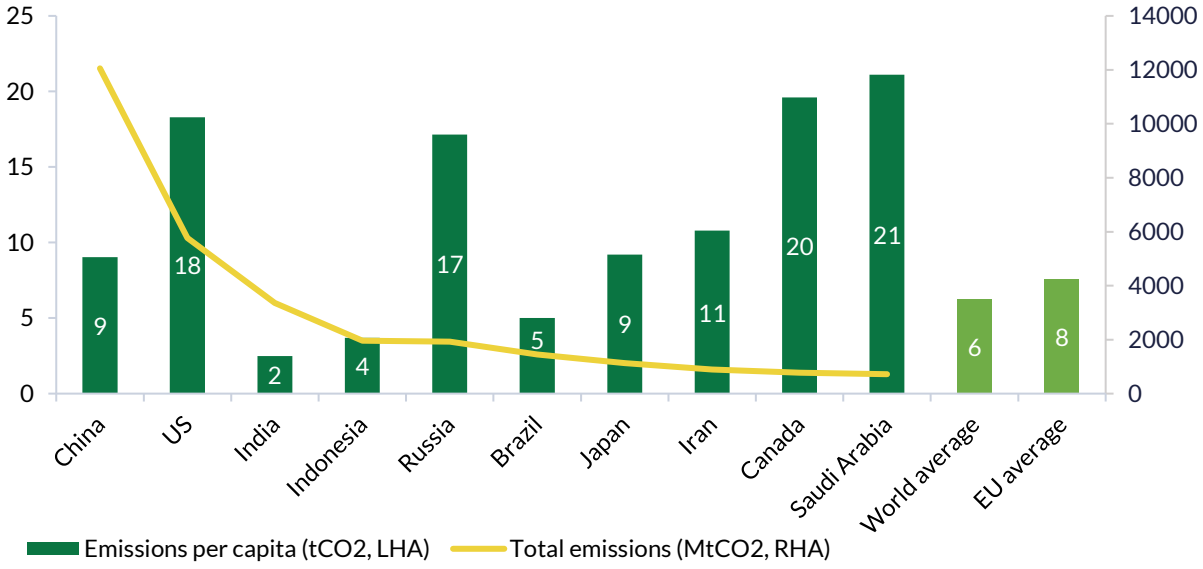
Regional differences in CO2 emissions differ widely. On a per capita basis, North America has higher emissions than any other region. Those of Europe are just under half the level of North America and are falling, with the EU setting a collective target of reducing emissions to 55% below 1990 levels by 2030. In absolute terms, the emissions share of Eastern Asia (China, Hong Kong, Japan, Macau, Mongolia, North Korea, South Korea, and Taiwan) more than doubled since 1990, from 13% to 27% in 2019, mainly due to China's rapid economic development. Eastern Asia's contribution to historical cumulative emissions is however lower (12%) than North America's (23%) and Europe's (16%).

By 2020, laws primarily focussed on reducing emissions existed in 56 countries, including the UK EU and Japan, covered 53% of global emissions. These 'hard pledge' countries have legislated interim targets for net zero by 2050. Many have achieved absolute reductions in emissions between 2010 and 2019 that are outpaced by rising emissions elsewhere. The energy crisis provides both an impetus to accelerate net zero, but also a reason to expand their supply in the name of energy security (see below). It is urgent for the top two 'soft pledge' emitters, China and the United States, to adopt such laws.

[4] IPCC, Special Report: Global Warming of 1.5°C, 2018.
[5] IPCC, Synthesis Report of the IPCC Sixth Assessment Report (AR6), Longer Report, March 2023.
[6] From 2010 to 2019, the IPCC reports sustained decreases in the unit costs of solar energy (85%), wind energy (55%), and lithium-ion batteries (85%).

China contributed over a quarter of global CO2 emissions in 2019 (Figure 1), and per capita emissions of 9 tCO2 were 36% above the UK; after netting out exports, China's consumption-based emissions are about 10% lower, highlighting China's crucial position as the manufacturing centre of the world's economy (see below for Carbon Border Adjustment Mechanism).[7]

Figure 1: Top ten GHG emitting countries total and per capita emissions, 2019



[Source: Enders Analysis, CAIT Climate Watch, European Parliament]

A Paris Agreement signatory, China's 2020 NDC contains soft pledges for emissions to peak "before 2030", by reducing the carbon intensity of GDP in 2030 by 65% relative to 2005, and for carbon neutrality to be achieved by 2060.[8] These pledges are integrated into China's 14th Five-Year Plan (2021–2025) for National Economic and Social Development, which target 5% annual GDP.

China should be in a strong position to decarbonise by adopting low-emission technologies, being the global leader in solar panel technology and batteries for EVs and of their dramatically reduced cost over the past decade. The 14th Five-Year Plan however highlights the contradiction in China between "strict controls" on coal use, the dirtiest fossil fuel and naturally abundant in China, and calls for "strengthening coal's role as an energy security guarantee". This contradiction is left to be interpreted by provincial and local officials, whose promotion will often depend on hitting GDP targets, not climate goals. The issuance of coal plant permits in China accelerated in 2022 to two per week.[9]

The US is the other major barrier to climate action. Emitting 18 tonnes per capita and contributing 11% of global emissions in 2021, the US is also the single largest carbon emitter in mankind's history. The US re-joined the Paris Agreement in January 2021 upon President Biden taking office, reversing former President Trump's withdrawal; presidential elections in 2024 are a risk. The US NDC of April 2021 contains a soft pledge to reduce its net emissions by 50-52% below peak 2005 levels in 2030;[10] at the height of the pandemic in 2020, US emissions were only 17% below 2005 levels.

[7] Our World in Data via European Parliament: *China's climate change policies*, October 2022.
[8] UNFCCC, China's Achievements, New Goals and New Measures for Nationally Determined Contributions, 2021. China expects to increase the share of non-fossil energy to around 25% and raise forest stock volumes by 6 billion cubic metres from 2005 levels, as well as bringing the installed capacity of wind and solar to more than 1,200 gigawatts (GW).
[9] Centre for Research on Energy and Clean Air (CREA) and the Global Energy Monitor (GEM), 'China permits two new coal power plants per week in 2022', February 2023.
[10] UNFCCC, The United States of America Nationally Determined Contribution, April 2021. The 2030 target is 33-35% below 1990.

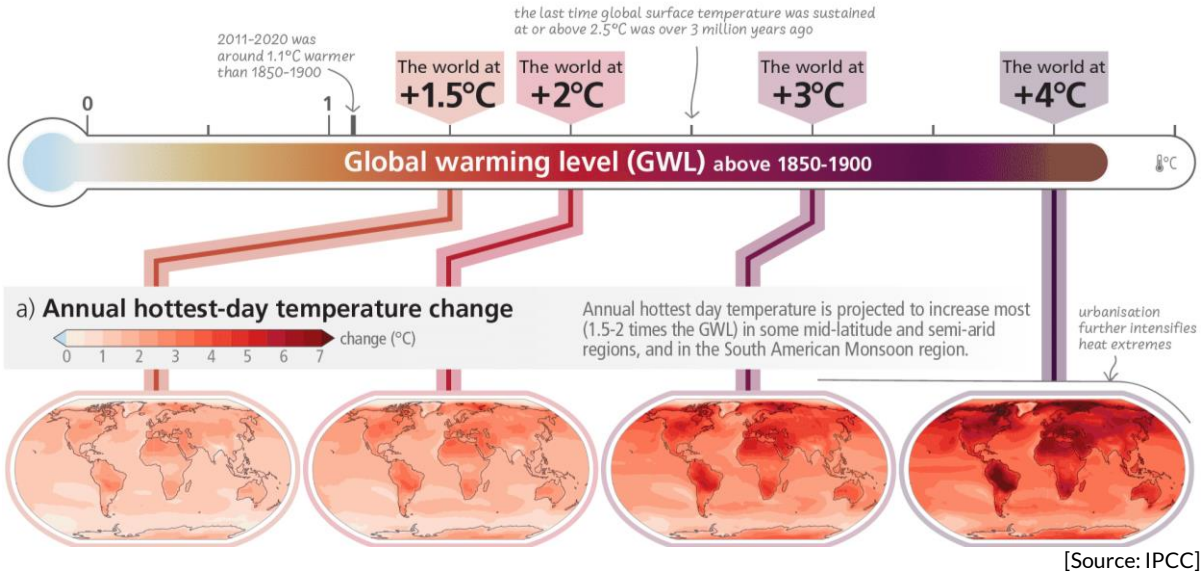
The US Long-Term Strategy policy document issued in November 2021 aims to achieve a net zero emissions economy by no later than 2050, through: 100% clean electricity by 2035; electrifying cars, buildings and industrial processes; switching to carbon-free hydrogen and biofuels for aviation, shipping and harder-to-decarbonise industrial processes; energy efficiency; reducing non-CO2 emissions of methane and nitrous oxide; and indirectly decarbonising agriculture through land sinks and engineered removals.[11] The US is also a signatory of the Global Methane Pledge.

The US long-term strategy lacks many specifics, placing its faith in innovation and the size of the US market in driving economies of scale, including for recycling batteries. The initial focus is on switching cars, vans, and heavy goods vehicles (HGVs) to EVs, due to transportation contributing 28% of US emissions.[12] The Bipartisan Infrastructure Law 2021 and Inflation Reduction Act 2022 provide for "green investment" subsidies for companies and consumer subsidies for the purchase of EVs. To reduce reliance on imports from China, subsidies are conditional on local content requirements in North America and countries with free trade agreements with the United States. The EU is also relaxing its state aid regime to promote a wave of green investment.

There are no easy pathways to sustainable development

The impact of human-caused climate change is global. The IPCC report states: "It is virtually certain that hot extremes (including heatwaves) have become more frequent and more intense across most land regions since the 1950s."[13] The regions that have contributed the least to climate change are those most vulnerable to its effects, cruelly exposing Central and South America, Africa and South Asia, to rising sea levels, growing water and food poverty and insecurity. Without additional commitments or actions taken, warming could reach 3°C by 2100 (Figure 2). Overshooting the 1.5°C target—exceeding and then reversing through negative emissions—will also cause irreversible damage to the planet's nature and people.

Figure 2: Increments of global warming



[Source: IPCC]

[11] US State Department, The Long-Term Strategy of the United States, November 2021.
[12] US Environmental Protection Agency, 'Sources of Greenhouse Gas Emissions', accessed 12 May 2023.
[13] IPCC, Synthesis Report of the IPCC Sixth Assessment Report (AR6), Longer Report, March 2023, page 12.

Meeting net zero by 2050 is a huge challenge for the UK

UK climate performance: targets catching up

The UK has been at the forefront of setting decarbonisation targets amongst the G7.[14] The Climate Change Act (2008) set a target to reduce GHG emissions by 80% compared to 1990 levels by 2050, and was strengthened in 2019 to commit to net zero by 2050 instead.[15] The Act also created the independent Climate Change Committee (CCC) to recommend emissions reduction targets for the UK (known as carbon budgets) and evaluate progress towards meeting them. The UK Government must set out five-yearly carbon budgets 12 years in advance and is required to consider (but not necessarily follow) the recommendations of the CCC.

The UK adopted a Net Zero Strategy in October 2021 that includes its share of international aviation and shipping emissions, not required by the Paris Agreement. Relative to 1990, UK emissions declined by 49% by 2022.[16] The UK's NDC aims for a 68% reduction by 2030.[17] If achieved, this would represent a faster decarbonisation than any other G7 country, though from a higher initial baseline. The UK is among the top three countries in Europe for clean energy investment over the past five years.

The CCC has flagged significant risks or a policy gap for 38% of the required emissions reduction

Progress so far has been good. The first three carbon budgets, which collectively covered 2008-2022, were met or outperformed: the first budget by 1% and the second by 14%, with the third budget on track to be met, though, according to the CCC, this is "not due to policy, but very largely due to accounting changes in the EU Emissions Trading System and the lasting effects of the recession".[18] The fourth and fifth budgets, covering 2023 to 2032, are not on track, though the UK Government plans to meet these targets by 'carrying forward' surplus emissions from previous carbon budgets, contrary to CCC recommendations. Carrying forward a carbon surplus from the past to offset a deficit in a current carbon budget is an illusion of progress and makes net zero more difficult to achieve.

The CCC expects the UK will fall short of the Sixth Carbon Budget for 2033 to 2037, which aims for a 78% reduction in GHG emissions from 1990.[19] That budget assumes that by 2035, relative to 2019, renewables and EVs will further decarbonise electricity supply by 55% and surface transport by 83%. New combustion engine car and van sales will end in 2030 (2025 in Norway, and 2035 in the EU), and HGV sales by 2040.

The engineering and economics of EVs look attractive, though they are higher-priced, but mass rollout requires a vast expansion of electricity supply to fully support increased demand as electrification grows, as well as a dense network of charging points to reduce 'range anxiety'. Batteries must also be recyclable and economical to replace. However, the CCC has flagged significant risks or a policy gap for 38% of the required emissions reduction, notably for buildings, manufacturing and construction, agriculture and land use, and engineered removals (carbon capture and storage).

[14] BEIS, UK becomes first major economy to pass net zero emissions law, June 2019.
[15] The net zero target requires that by 2050 any GHG emissions produced in the UK must be reduced as far as possible and any residual emissions must be offset (e.g., natural carbon sinks like forests or using technology like carbon capture and storage). Imports to the UK aren't covered, only emissions that take place on UK territory. Sources: Climate Change Act 2008; BEIS, UK becomes first major economy to pass net zero emissions law, June 2019.
[16] Department for Energy Security and Net Zero, 2022 UK greenhouse gas emissions, provisional figures, 30 March 2023.
[17] BEIS, The UK's Nationally Determined Contribution communication to the UNFCCC, December 2020.
[18] Climate Change Committee, Carry-forward of surplus emissions: Letter from Lord Deben to Claire Perry, 15 February 2019.
[19] Climate Change Committee, Progress in reducing emissions 2022, Report to Parliament, June 2022.

Despite these shortcomings, the UK's generally high performance compared to other nations should not be understated, with both consumer- and business-oriented schemes available to fund development. Schemes to promote alternative energy sources include 'Great British Nuclear' (co-funded with industry), Net Zero Hydrogen Fund worth up to £240 million, and Floating Offshore Wind Manufacturing Investment Scheme worth up to £160 million, and plans for possible carbon storage in the North Sea.

Consumer-focused schemes include the Plug-In grant for buyers of EVs, a fund of £350 million for landlords installing electric vehicle (EV) charging infrastructure, the 'Great British Insulation Scheme' funded by up to £1 billion by March 2026, and the Boiler Upgrade Scheme' to broaden heat pump adoption, which is in effect until 2025. Heat pumps are an attractive alternative to gas boilers due to their lower running costs, although these are not appropriate for the UK's many older dwellings and apartment buildings. Even where appropriate, heat pumps face significant uptake challenges, such as high capital and installation costs, an inadequate supply of parts and qualified installers. In 2022, the residential sector accounted for 17% of all CO2 emissions in the UK, mainly from cooking and heating.

While UK-based CO2 emissions are relatively easy to target, the UK is among the many countries that import goods from countries without 'hard' pledges, notably China and the United States. With 43% of the UK's consumption emissions arising from imports, the UK Government is consulting on the implementation of a Carbon Border Adjustment Mechanism (CBAM), to prevent carbon leakage, by requiring imports to bear an equivalent carbon price to domestic production. The EU, also a major trade partner of the UK, will introduce its CBAM in 2023.

The energy crisis has polarised the renewable energy agenda

Russia's invasion of Ukraine in February 2022 fundamentally changed the context of the drive for net zero. Energy security and expanded renewable energy supply were re-established as priorities by the UK's new Department for Energy Security and Net Zero following panic over fossil fuel supplies, when natural gas prices soared, and supplies tightened. Soaring energy demand was already surfacing as a major concern in 2021, upon the recovery from the pandemic-related lockdowns of 2020; global CO2 emissions rose by 1.9Gt to 36.6Gt in 2022, the largest ever annual rise in emissions.

The tension between the investment and time required to build out renewables capacity, the fact that renewables are not currently a full solution to demand due to intermittency of supply, and the immediate need for enhanced security of energy supplies amidst market shortages, led to a resurgence in securing gas supplies and contracts for fossil-fuel-fired power plants, also handing a lifeline to coal.

Since coal has a higher carbon content than gas, more carbon dioxide emissions result from burning one tonne of coal to generate a unit of power than from one tonne of gas. In the UK, carbon emissions per tonne of coal are estimated to be almost double those of natural gas. The switch from coal to natural gas, and then from fossil fuels to renewables, are the major contributors to the UK's virtuous emissions pathway since 1990.[20] CO2 emissions from power stations were 73.6% lower in 2022 than in 1990, despite consumption of electricity being only 5.7% lower over that time period.

In the UK, 46% of electricity production in 2022 was reliant on fossil fuels, the rest being reliant on nuclear power and renewables.[21] The UK's electricity generation from wind power rose by 715% in just over a decade.[22] Wind and solar now produce a record 12% of global power.[23] However, remaining avenues to further electrify energy supply and build in resilience to energy intermittency are increasingly expensive and difficult to implement. As the IPCC warns, hard limits are being reached.

[20] Despite the UK Government's commitment to phase out unabated coal-fired power generation by the end of 2024, in line with their net zero target, the closure of a coal-burning unit at the Ratcliffe-on-Soar power plant was delayed two years.
[21] Department for Energy Security and Net Zero, 2022 UK greenhouse gas emissions, provisional figures, 30 March 2023.
[22] Office for National Statistics, Wind energy in the UK: June 2021, 14 June 2021.
[23] Ember, Global Electricity Review 2023, 12 April 2023.

Rising and more volatile natural gas prices have shifted the investment case in favour of renewables: fuel prices account for 90% of the rise in average electricity generation costs (and gas alone more than 50%), and gas prices in April 2023 remained at c.2.8x pre-crisis levels, despite falling from a peak of c.20x pre-crisis levels in summer 2022.[24] While consumers' soaring home energy bills have been cushioned by the Energy Price Guarantee until June 2023, businesses are more exposed despite the Business Energy Relief Scheme, which expired in April 2023. Renewables are more attractive from a corporate as well as environmental perspective, driving stakeholder interest and investment momentum.

The shift in the investment case is driving innovation. Electrification of the national energy grid underpins other carbon reductions and is increasingly affordable in the new energy context. Large scale renewables auctions are now driving prices down to 30-50€/MWh—attractive in the current market, with average spot prices for gas over 200€/MWh, whereas for most of the last decade renewables have been unable to outcompete gas prices typically in the lower half of that range.

Rising and more volatile natural gas prices have shifted the investment case in favour of renewables

Unlike the EU, very exposed to the end of oil and gas imports supplied by Russia, the UK Government does not promote voluntary demand reduction as a pathway to energy security or to net zero. The themes of UK policy are diversifying domestic energy supply, raising efficiency (insulation, heat pumps), and decarbonising vehicles (EVs). Using as much energy as possible is the prevalent theme for businesses and consumers, rather than curbing demand; the same is true of food loss and waste, another alarming blind spot.

This places the onus on the private sector—especially businesses motivated by margin enhancing cost-cutting and risk mitigation—to be more ambitious on decarbonising their operations and net zero targets. Perfection should not be the goal to the exclusion of all else: any small cutback is still progress.

Businesses play a crucial role in reaching net zero

Evaluating emissions: complex but necessary

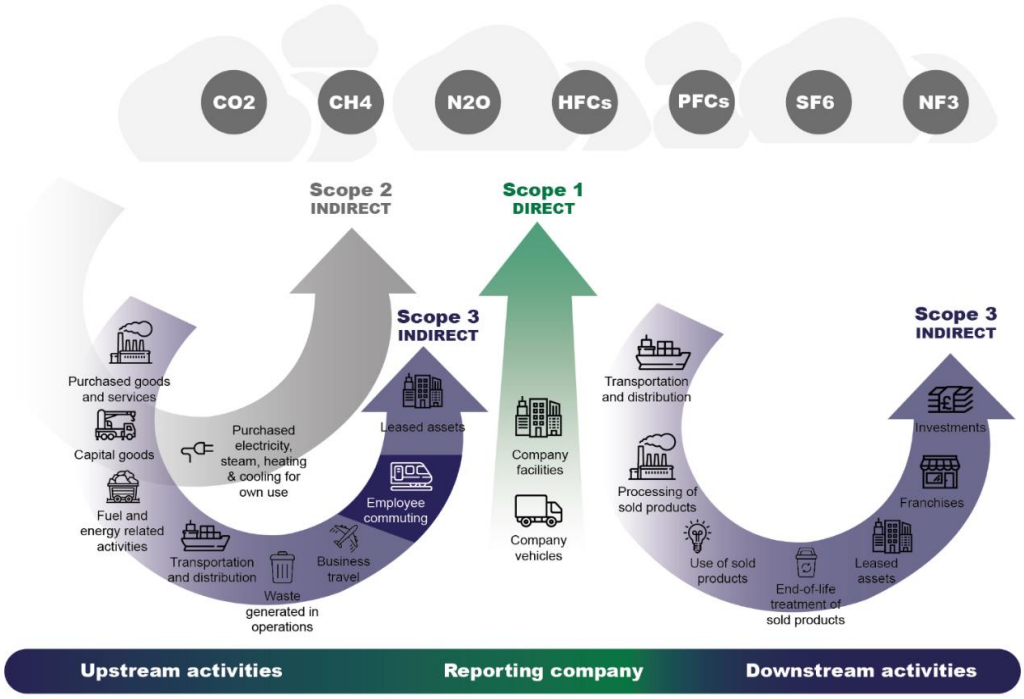
Meeting ambitious 2030 emissions reductions targets, let alone 2050 targets, requires a massive shift in 'business-as-usual' across every sector, both public and private. This decade is particularly critical as businesses will be increasingly affected by every aspect of the transition to net zero, and collectively play a central role in innovating products and services, investing and financing lower carbon alternatives. The direction of travel must be towards low-carbon energy solutions as quickly as possible.

Business accounted for 19% of the UK's carbon emissions in 2022. Measuring and reporting these emissions is a crucial step to meeting net zero targets. The three scopes (Figure 3) are:

- Scope 1—Direct GHG emissions from activities owned or controlled by the business (e.g. sites and combustion engine company vehicles)
- Scope 2—Energy emissions from the purchase of electricity, heat, steam and cooling. These are indirect emissions that are a consequence of activities, but which occur upstream at sources the business does not own or control (e.g. energy purchased to heat, cool and light offices)
- Scope 3—Other indirect emissions that are a consequence of the business' actions, which also occur at sources which it does not own or control, and which are not classed as scope 1 or 2 emissions. These can occur upstream (e.g. outsourced operations, such as printing) or downstream (e.g. end-customer use of manufactured electronics)

[24] City AM, 'Gas prices: How long before they return to pre-energy crisis levels?', 5 April 2023.

Figure 3: Scope 1, 2, and 3 emissions and sources



[Source: Enders Analysis, Climate Change Committee]

As scope 3 reporting is not yet a requirement for most businesses, companies that do so will report higher carbon costs for their activities, and that is one barrier to adoption. Scope 3 engages the measurement of a company's upstream and downstream emissions, which is much harder than evaluating only internal use. Reducing scope 3 emissions requires companies to scrutinise suppliers and support them to adopt environmental practices or switch to greener alternatives. **Scope 3 emissions are often the largest source of a business' reported emissions.**

Employee business travel is part of scope 1 emissions. Dramatically curtailed during the pandemic, many businesses have reversed the habit of unbridled business travel and become much more careful in this area. Employee commuting is often overlooked in a business' carbon footprint, viewed as part of each consumer's own carbon footprint. Here again, valuable lessons were learnt during the pandemic, with work from home (WFH) enabled by the UK's telecom infrastructure. Hybrid WFH can permanently reduce the UK's carbon footprint, even if the emissions contribution is relatively modest.

Most medium and large-sized UK businesses[25] are required to make detailed mandatory climate disclosures (see Appendix); Streamlined Energy and Carbon Reporting (SECR) came into effect on 1 April 2019.[26] Companies report carbon emissions that fall under scopes 1, 2 or 3 (Figure 3). Listed businesses are required to report scope 1 and 2 emissions, with scope 3 emissions left to their discretion.[27] Many TMT businesses voluntarily disclose scope 3 emissions, which are an important component of their decarbonisation targets.

[25] Quoted companies (UK incorporated and listed on LSE/EEA state/NYSE/Nasdaq), large LLPs, and large unquoted companies who meet at 2 or more of: turnover equal to or over £36 million; balance sheet total equal to or over £18 million; 250 or more employees. Companies incorporated outside the UK (including foreign parent companies of UK subsidiaries) are not required to report.
[26] UK Government, Environmental reporting guidelines: including Streamlined Energy and Carbon Reporting requirements, March 2019.
[27] The exception is for large unquoted companies and LLPs who must disclose energy use and related emissions from business travel in rental cars or employee-owned cars where they are responsible for purchasing the fuel.

Investors and shareholders push for more climate action

While the regulatory and policy framework has shaped the drive towards net zero, the private sector is able to move faster and has the resources and incentive to speed up the transition to net zero, anticipating regulatory changes, punitive measures, alongside investor and shareholder demand for greater transparency and accountability.

Private sector investment in clean energy in 2022 rose 70% from pre-pandemic 2019 levels.[28] While high fossil fuel prices will continue to improve the investment case, the more challenging business environment created by rising capital costs amidst inflation could interfere with the necessary trajectory of investment growth: achieving net zero by 2050 is projected to require investment to treble by 2030, including in emerging and developing markets.[29]

The impetus behind climate action is not as universal at all tiers of business as the ambition of net zero requires. While shareholder votes in favour of environmental proposals surpassed those against for the first time in the last decade in 2021,[30] this pressure often goes against management recommendations: approximately three in ten voting shareholders at Goldman Sachs, Bank of America, and Wells Fargo backed demands for climate change plans, at the former two against board recommendations.

While environmental, social, and governance (ESG) proposals submitted globally to annual shareholder meetings increased 80% over the last decade, only 2% were centred on the environment, and not only experienced largely static growth but were largely about compliance—a response to legislative changes rather than a shift in corporate culture to embrace the benefits of net zero, both environmental and financial. There is a real threat of 'greenwashing'—where firms claim they are greener than they actually are—that cannot be addressed without better disclosures than are being demanded in public markets.

While to an extent outcomes matter more than the motivation behind them, the limited base of investor and shareholder support for net zero goals in and of themselves has an inevitable detrimental impact on plans to reduce emissions—this is in particular true of privately-held companies that lack shareholder pressure and must rely on enlightened owners to reduce emissions and target net zero.

Net zero initiatives: industry-led and external

Significant impetus to corporate climate action comes from schemes, initiatives, and industry bodies with the capacity and clout to drive forward net zero agendas. As You Sow is a US-based non-profit that promotes environmental and social corporate responsibility through shareholder advocacy, and Climate Action 100+ is an investor-led initiative with over 700 investors (responsible for $68 trillion in assets) that aims to ensure the largest corporate emitters take necessary action to address climate change.

Only the largest companies can implement the crucial shared measurement and reporting standards; one example is the Race to Zero, which originated with the UN Framework Convention on Climate Change (UNFCCC), which has advocated since 1994 for climate goals targeted primarily at developed countries. The Race to Zero campaign aims to extend these principles to rally non-state actors to halve emissions by 2030 by setting robust, measurable, and expert-reviewed goals and plans. Committed to by 30 FTSE100 companies,[31] with a collective market cap of £650 billion, they also aim to persuade other actors to commit to net zero and the Race to Zero aims. The Race to Zero benefits from its association with the UNFCCC (and the near universal reach it enjoys) in advocating for its goals, though its extreme broad-brush approach ensures goals remain non-specific.

[28] IRENA, 'Investments in Renewables Reached Record High, But Need Massive Increase and More Equitable Distribution', 22 February 2023
[29] International Energy Agency, Net Zero by 2050, May 2021
[30] Planet Tracker, ESG Proposals at annual shareholding meetings: will investors support them?, May 2022
[31] As of March 2021.

Environmental issues should not be considered in isolation either: the UN Global Compact addresses the environment amidst other areas of corporate responsibility, such as human rights, labour, and anti-corruption, while also advancing sustainable development goals. As the world's largest corporate sustainability initiative, with over 17,000 participants in over 160 countries, it has reach and influence that environment-only initiatives may not. While the environment is one among other areas of corporate responsibility, the UN Global Compact appeals to companies that may not have otherwise committed to an explicit environmental initiative, and likewise, enables greater good by persuading companies that are concerned about their environmental impact to address other issues of global significance.

Independently validated science-based targets

Currently there is no global standard for ESG reporting or emissions reductions plans more broadly. Instead, there are mandatory reporting standards in hard pledge countries, which however are not audited or enforced by governments. A mosaic of standards and frameworks shape voluntary company disclosures. Some of the most prominent global ESG-related standards and frameworks include The Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB) standards, and the Taskforce for Climate-related Financial Disclosures (TCFD). The International Sustainability Standards Board (ISSB), formed at COP26, is in the process of developing a global standard for corporate sustainability reporting through the IFRS Sustainability Disclosure Standards, building on existing market-led, investor-focused reporting initiatives including TCFD, SASB and the World Economic Forum's Stakeholder Capitalism Metrics.

The importance of scale adherence to make these schemes effective cannot be understated. The current mosaic offers many solutions for the same goals, with vastly different methodologies. It's very important that investors and shareholders can compare businesses against their peers, and comparisons more generally give further impetus to decarbonisation by disseminating best practices.

The not-for-profit Carbon Disclosure Project (CDP) is popular with companies and their investors because it is viewed as the most useful ESG rating provider according to respondents in ERM's Rate the Raters 2023 survey.[32] These ratings are designed to help investors identify and understand financially material ESG risks to a business. Every year, investors working with CDP ask companies to respond to its questionnaires on climate change, deforestation and water security, with scores awarded from A-F. Investors can then access the companies' responses and can use the data and insights in their own investment process. In 2022, over 680 investors with assets of over US$130 trillion requested more than 10,000 companies to disclose to them through CDP.

The Science-Based Targets Initiative (SBTi) has emerged as the industry's 'gold standard' for verifying whether corporate climate targets are in line with the 2015 Paris Agreement, with nearly 5,000 members as of May 2023 (and more than 2,500 companies with approved targets). The majority of SBTi-aligned firms have set near-term emissions reductions targets (within the next five to ten years) and also committed to net zero, although not setting a date, for example net zero by 2050. Individual company emissions reductions targets are inconsistent (see Appendix), and some businesses use baseline years with unusually high emissions.[33]

SBTi does not check the accuracy of underlying data or require this data to be verified by a third party.[34] Likewise, CDP relies on companies filing a 100-page questionnaire and paying a fee to submit, an onerous process, especially for smaller companies with fewer resources available.

[32] ERM, Rate the Raters 2023, ESG Ratings at a Crossroads, March 2023.
[33] New Climate Institute, Corporate Climate Responsibility Monitor 2022, February 2022.
[34] Science community letter to Lila Karbassi of the SBTi, 25 October 2022.

The SBTi is moving to address this: in October 2021, the SBTi launched its corporate net zero standard to provide a standardised approach for large corporates (more than 500 employees) to set more rigorous science-based targets, including the requirement to:

- **Set near-term targets**: 5-to-10-year emission reduction targets in line with the 1.5°C pathway, continually updated as a company reaches its near-term target date. Halving emissions by 2030 must be the overarching priority
- **Set long-term targets**: emissions reduction targets to a minimal residual level by 2050. Most companies must reduce emissions by more than 90%. Per SBTi a company cannot claim to be 'net zero' unless this has been achieved
- **Neutralisation of residual emissions**: after a company has achieved its long-term targets, it must use carbon removal and storage to counterbalance the final <10% of residual emissions that cannot be eliminated, and thus claim to be 'net zero' when has been achieved
- **Beyond value chain mitigation:** activities that avoid or reduce GHGs

SBTi includes companies in its dashboards that are committed to develop targets and submit these for validation within 24 months. While a positive first step, they may not yet have validated science-based targets yet: those that fail to submit targets within 24 months of their commitment will, from the beginning of March 2023, be identified in the dashboard as 'Commitment removed'.

Carbon offsets: handle with care

Carbon offsets—methods of removing equivalent carbon from the environment—were worth $2 billion in 2021, four times more than in 2020.[35] Offsets are used by companies that cannot feasibly eliminate all emissions, such as agriculture or construction, to meet net zero targets, but are more broadly applied, often as a substitute to emission reductions. Offsets can be implemented in a variety of ways—on a broader business scale, or by giving individuals the option to pay an additional fee to neutralise the carbon impact of their purchase—and can be outsourced to specialists or operated in-house (typically only a route for the largest offsetters).

> *"Only once all possible emissions reductions have taken place can it start becoming reasonable to talk about 'offsetting' the remainder to achieve net zero"*
>
> Mike Berners-Lee, *How Bad Are Bananas?*, 2020, page 186

However, **there is no practical substitute for not polluting in the first place**: if everyone offsets everything, then emissions have not been reduced at all. While initiatives such as reforestation are an important part of restoring the natural world, companies should reduce and replace their use of offsets as soon as possible, bearing in mind the following pitfalls:

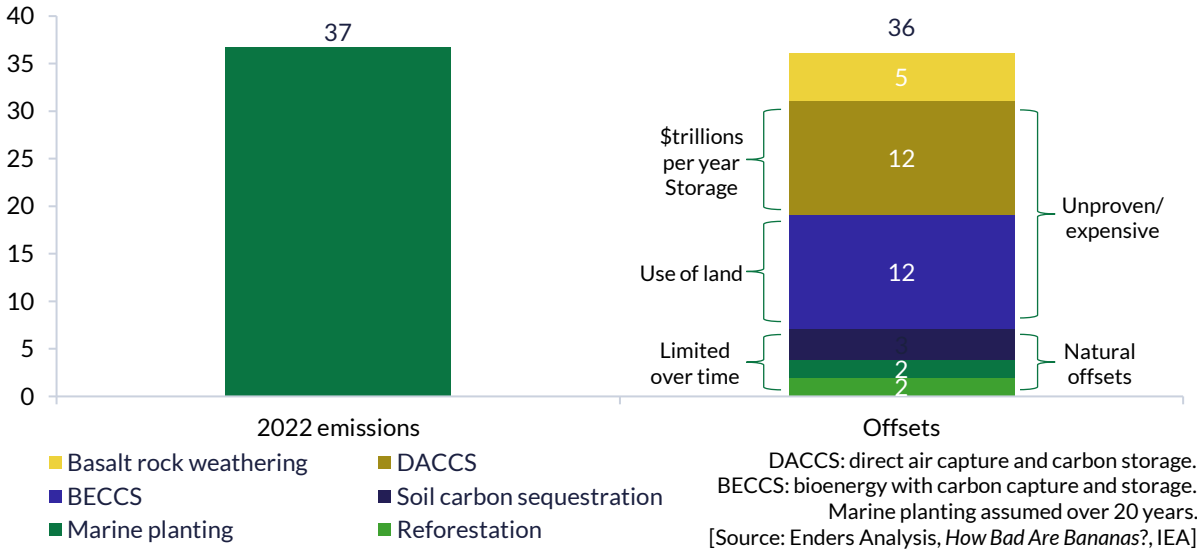
- Even certified schemes are likely to overstate the actual amount of carbon removed
- Initiatives like planting trees remove carbon over a long period, whereas the crisis is immediate
- Some schemes do not remove carbon at all, but instead reduce future emissions—this is not a legitimate offset
- The Earth has finite space, so natural offsets can only be a temporary solution
- Synthetic solutions are unproven, costly, and energy-intensive—or carry other risks
- Reforestation often relies on appropriating land in developing countries in order to support and greenwash the lifestyle of the wealthy few
- The allure of "pay to play" offsets may lead individuals to believe they need not change their habits

[35] Ecosystem Marketplace, VCM Reaches Towards $2 Billion in 2021, 3 August 2022.

In January, the *Guardian* blew the lid on Verra, until then the world's leading certifier of carbon offsets.[36] The joint investigation with *Die Zeit* and SourceMaterial evaluated that more than 90% of Verra's rainforest offset credits, used by large corporations like Disney, Shell, and Gucci, are likely to be "phantom credits" that do not represent genuine carbon sequestration.

Not all schemes will have the same flaws, but every carbon sink has its limit, **underlining the need for every organisation to focus its energy on reducing its footprint ahead of paying for offsets**. In addition to the capacity limits of natural offsets such as planting trees or soil carbon sequestration (which are arguably required to remove extant carbon in the atmosphere), there are significant cost and land use concerns associated with carbon capture methods currently in development (Figure 4). The gold standard will not and should not shift away from reducing emissions: continually offsetting future emissions is unsustainable and ineffective in comparison.

Figure 4: 2022 emissions and estimated maximum annual offsets (GtCO2e)



DACCS: direct air capture and carbon storage.
BECCS: bioenergy with carbon capture and storage.
Marine planting assumed over 20 years.
[Source: Enders Analysis, *How Bad Are Bananas?*, IEA]

Spotlight on TMT companies

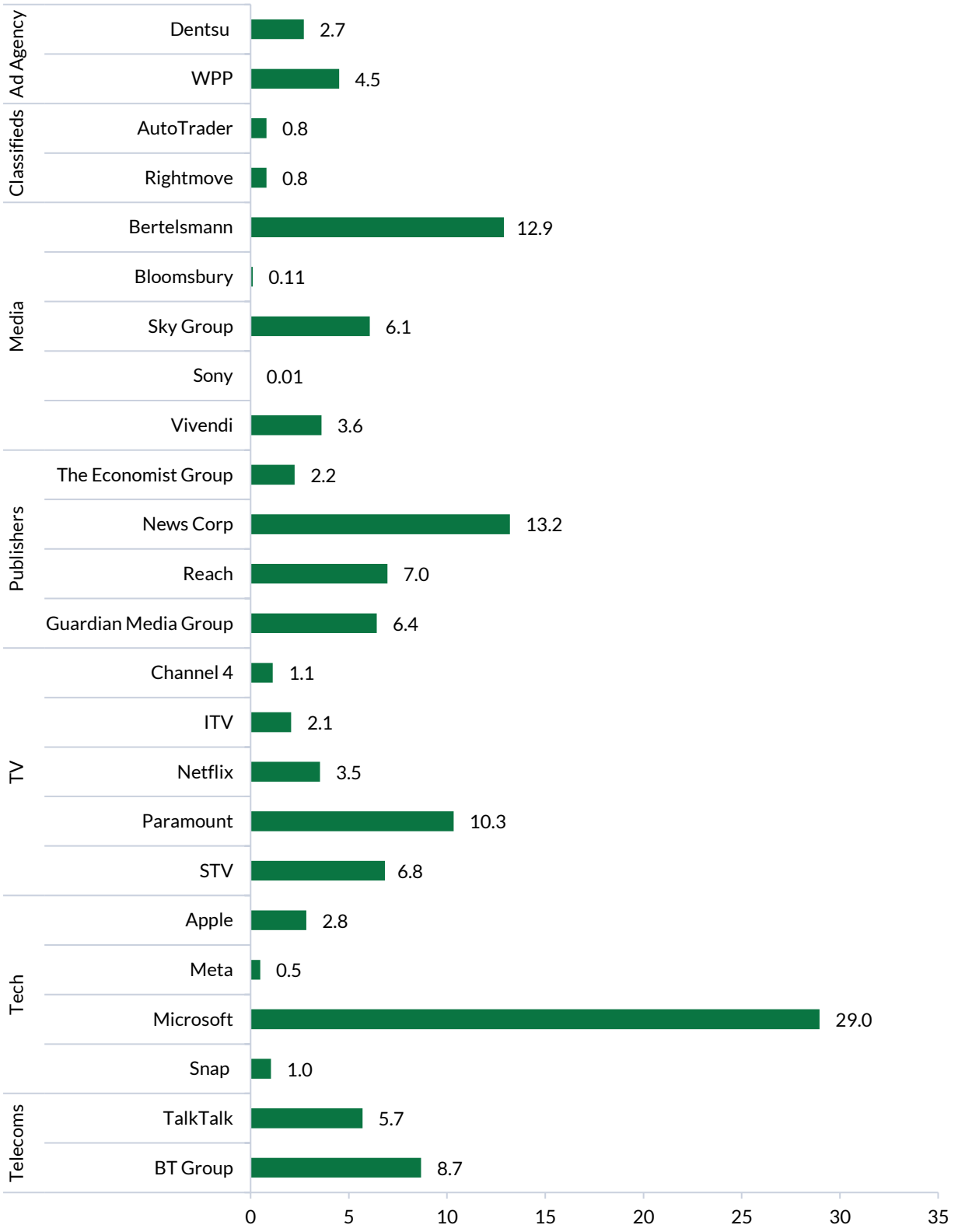
Company emissions reporting: facilitating accountability

This year's assessment of the carbon intensity of TMT companies operating in the UK (multiple markets or globally in the case of several companies) is presented as equivalent tonnes of carbon dioxide (tCO2e) per million in revenue reported for scopes 1, 2, and 3 (Figure 5), sourced mainly from the SBTi (see Appendix). Each company gains from this independent validation a deeper knowledge of the pathway to net zero, leading to a more realistic view of the challenge and the changes required to sustain the journey over time.

The most important topline conclusion of this collective assessment is that TMT companies are firmly committed to near-term emissions reductions targets for 2030 relative to varying base years, and eventually to net zero, although few have set a precise date. Many companies have revised their initial net zero targets for 2030 to the more realistic goal of halving scope 1 and 2 emissions, in line with the IPCC's call to halve emissions by 2030 relative to 2010. Most companies will also switch their electricity supply from fossil fuels to 100% renewable energy sources.

[36] The *Guardian*, Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows, 18 January 2023.

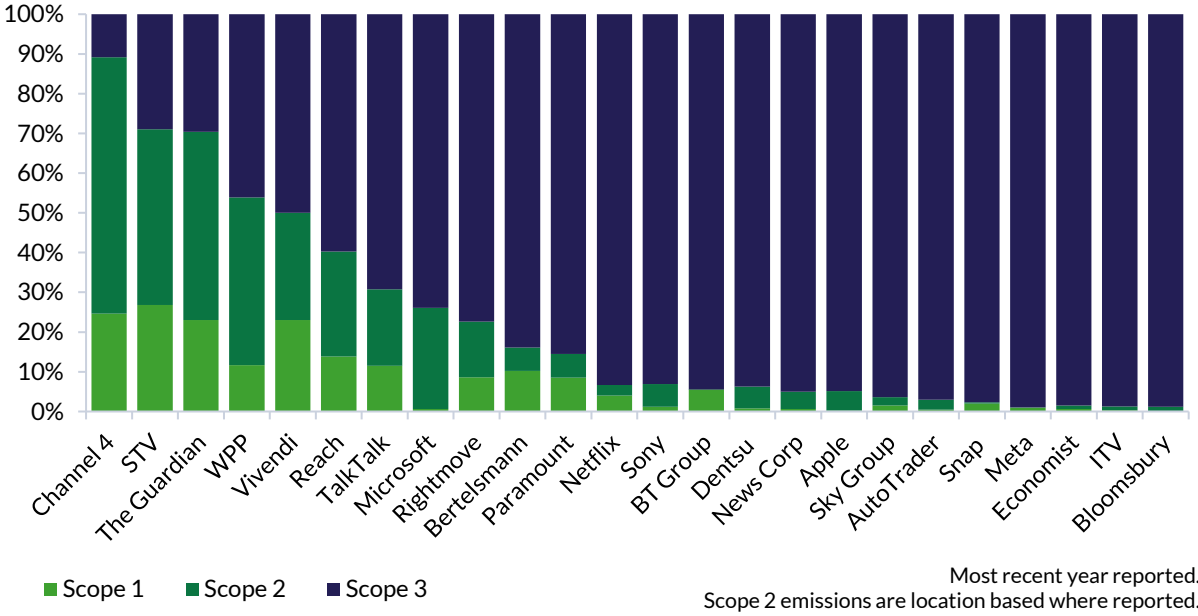
Figure 5: Carbon intensity ratios, scopes 1 & 2 (tCO2e), by revenues (reporting currency), selected companies



Reporting currencies: WPP, AutoTrader, Rightmove, Bloomsbury, Sky Group, The Economist Group, Reach, Guardian Media Group, Channel 4, ITV, STV, TalkTalk, and BT Group report in GBP; News Corp, Netflix, Paramount, Apple, Meta, Microsoft, and Snap report in USD; Dentsu and Sony report in JPY; Bertelsmann and Vivendi report in EUR.
Where reported we've opted for Scope-2 location-based emissions over market-based.
[Source: Enders Analysis, company reports]

While setting science-based targets also enhances the transparency and comparability of TMT companies within their peer groups, we caution that each company's carbon intensity and allocation across scopes 1, 2 and 3 (Figure 6), reflects a distinct mix of operations, sites (e.g. buildings), energy procurement and outsourcing, and the myriad of factors in upstream and downstream emissions.

Figure 6: Proportion of global emissions scopes 1, 2 and 3 (%)



Most recent year reported.
Scope 2 emissions are location based where reported.
[Source: Enders Analysis, company reports]

Media companies generally enjoy a lower carbon footprint than fixed-line telecommunications companies operating networks. This is not a criticism, because those networks enable the digital delivery of multiple communication, entertainment, e-commerce and platform services, including those in support of lower carbon lifestyles, such as hybrid WFH. This practice has become more standardised and businesses now include employee commuting in their scope 3 emissions.

Among publishers, those whose revenues tilt to digital have lower carbon costs than those tilted to print, which is carbon heavy and also requires paper and other inputs. Those that outsource the printing of newspapers, magazines, or books have lower scope 1 and 2 emissions than those that in-house the operation (e.g. News Corp), but printing emissions should be audited and recorded in scope 3, and part of their targets (e.g. Bertelsmann).

The UK's major broadcasters (BBC, ITV, C4, C5, STV, and Sky) each have interim scope 1, 2, and 3 emissions reductions targets for 2030, or will soon announce them. Most are aiming to halve scope 1 and 2 emissions by 2030. While also committed to net zero, they have not yet settled on a specific year.

The BBC's relatively high carbon intensity ratio is attributable to its sizeable property portfolio (c.355,000m^2) and BBC Studios. Broadcasters operating in-house studios incur higher scope 1 and 2 carbon costs than when commissioning productions, although the latter should be reported in scope 3. Commissions highlight the responsibility of broadcasters to address the sustainability of production companies, by conveying and rewarding best practices, including audits: an observation that also applies to Netflix, Warner Bros. Discovery, Disney, and other studio businesses with facilities. The carbon footprint of audiovisual productions can be tracked and certified by albert, the free tool managed by BAFTA.[37] New build studio facilities are an important driver for emissions reductions pathways.

[37] albert, Carbon Calculator and Production Certification.

A core theme is the influence the media has over consumers and wider society in driving climate action. To this end, the media must demonstrate its own corporate responsibility over its own emissions and supply chains, setting a good example. The Advertising Association is leading the way with its Campaign Ad Net Zero Awards—part of the Ad Net Zero initiative, see below—which aim to celebrate and draw attention to positive actions in the advertising community, across both company practice and standout productions that promote sustainable products and practices. The awards at the first edition in 2022 went to B Corp-certified Coffee & TV, and the Grand Prix winner, *Cook Clever*, *Waste Less with Prue and Rupy*, a four-episode collaboration between Hellmann's, Channel 4, media agency Mindshare, and BBC Studios' Science Unit, addressing food waste—a significant source of GHG emissions. With over 800,000 viewers for the finale, the winner highlights the traction and influence of cross-media outreach efforts, and provides an example for other companies to emulate.

A core theme is the influence the media has over consumers and wider society in driving climate action

Our case studies, on the *Guardian*, Ad Net Zero, WPP, Bertelsmann, Vivendi, Sky, BT Group, and Virgin Media O2, provide more information on their emissions reduction pathways, including governance to that end. The case studies of media companies also highlight their unique society-leading position, able to mobilise their audience touchpoints to serve the environment, whether in support of climate action, the circular economy, or biodiversity.

The Guardian: a sustainable community

The *Guardian* is demonstrating impressive leadership on social and environmental governance, having set out its agenda in its *Positive Impact and Sustainability Report* from 2019/20.[38] A new report covering its most recent performance and current priorities is due to be published shortly.

The *Guardian* has ramped up its ambition since 2019, when it published its first Climate Pledge,[39] further developed and refined in its latest Climate Pledge 2022.[40] The *Guardian* is using science-based targets to reduce its emissions, is pursuing an ambitious environmental journalism strategy for the *Guardian* and *Observer* to expand the horizons of its audiences in the UK and globally, and is enhancing diversity and inclusion within its organisation. The *Guardian* has two environmental governance groups: a sustainability strategy group, which embeds sustainability into the company's operations, and an emissions reduction group delivering the reduction target.

The *Guardian* initiated a full audit of its emissions in the 2018/19 financial year. The *Guardian* was certified in 2019 as a B Corporation, meeting high standards of social and environmental performance, transparency, and accountability, a process it is repeating in 2023, aiming to improve its score.[41]

In November 2021, the *Guardian* committed to independent validation of its targets by the SBTi, a process which is in the final stages. While the *Guardian* is a small emitter in the UK, it pledged in October 2020 to eliminate at least 67% of emissions from its operations and supply chain, covering scopes 1,2, and 3, by 2030,[42] ahead of most TMT companies. Scope 3 emissions account for 97% of the *Guardian*'s total carbon impact. In December 2022 the *Guardian* added biodiversity impacts to its environmental audit, and the results of its first biodiversity audit are due in 2023.

[38] Guardian Media Group, Positive Impact and Sustainability Report 2019/20.
[39] The *Guardian*, The Guardian's environmental pledge 2019, 15 October 2019.
[40] The *Guardian*, The Guardian's climate pledge 2022, 10 Oct 2022.
[41] B Lab UK, What is a B Corp?, accessed 11 May 2023.
[42] The *Guardian*, How the Guardian plans to reach net zero emissions by 2030, 5 October 2020.

Print still contributes 71% of the *Guardian*'s emissions, which ongoing circulation decline will reduce, along with less packaging and unsold copies, and printing will be powered by 100% renewable energy by 2025. The *Guardian* is also evaluating the carbon cost of digital advertising, with an effort in place to measure the impact of the programmatic advertising supply chain, which lacks transparency. The *Guardian* is also seeking to improve its understanding of the impact of web and cloud hosting.[43] The *Guardian* is a member of the Advertising Association's industry-wide initiative Ad Net Zero.

The *Guardian* is relatively well-placed to reduce associated emissions given the success of its digital reader revenue strategy, though online advertising still generated about a quarter of revenues in 2022 (see The *Guardian*: Sustainability delivered, 2022-078]).

The *Guardian*'s journalism is where it can achieve the greatest impact on the environment, enjoying an average global audience of 158 million unique monthly users in 2022. Comscore figures show the *Guardian* had 24.8 million unique visitors in the UK in March 2023, equivalent to 43% reach, and 41.5 million unique visitors in the US, for 15% reach.

The *Guardian* has adopted more urgent language to report on the climate crisis since May 2019 (Figure 7). In addition to reporting on the environment, highlights of its investigative journalism include:

- In May 2022 the *Guardian* published its Carbon Bombs investigation, revealing nearly 200 gigantic planned oil and gas projects that collectively would push the world well beyond agreed targets for temperature limits;
- In January 2023 the *Guardian* published a major investigation into forest carbon offsets sold by the world's leading certifier Verra, finding that more than 90% of credits sold were likely to not represent genuine carbon reductions. As a result, Verra said it would phase out its rainforest offsets programme by mid-2025. The *Guardian* will therefore not use offsets to achieve net zero

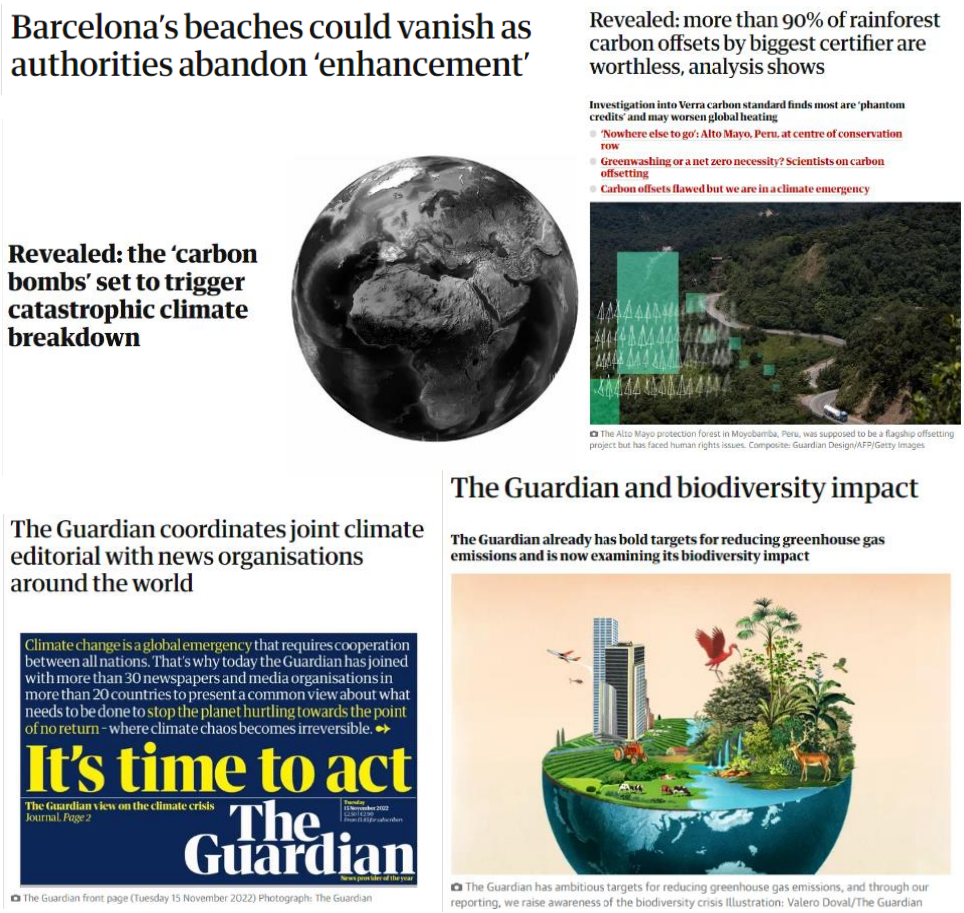
In 2015, Guardian Media Group announced it would divest its endowment fund from all fossil fuel holdings, the largest fund to have made that commitment at the time.[44] In January 2020, the *Guardian* banned fossil fuel advertising, saying "Our decision is based on the decades-long efforts by many in that [fossil fuel] industry to prevent meaningful climate action by governments around the world."[45]

This focus on the environment resonates with the values of its readers, and big climate stories drive readers' adherence to and trust in the *Guardian*; for example, the climate moment campaign in September 2022 drove a 90% increase in supporter revenue on the previous week.

The *Guardian*'s prominence and strong reader connections give it agenda-setting power. The *Guardian* is a founding member of Covering Climate Now supporting global newsrooms, and in November 2022 coordinated a joint climate editorial with international news organisations.[46] At the 2022 UN Biodiversity Conference (COP15) in Montreal, a UN official said the *Guardian*'s "unprecedented attention" on biodiversity contributed "significant pressure on delegates for a successful negotiation".

[43] ICT was estimated to be 2.5% of global emissions in 2020. Source: Mike Berners-Lee, *How Bad Are Bananas?*, 2020, page 173.
[44] The *Guardian*, The rise and rise of the fossil fuel divestment movement, 19 May 2015.
[45] The *Guardian*, Why the Guardian will no longer accept fossil fuel advertising, 29 January 2020.
[46] The *Guardian*, 'The Guardian coordinates joint climate editorial with news organisations around the world', 15 November 2022.

Figure 7: The *Guardian*'s climate coverage and sustainability action



[Source: The *Guardian*]

Ad Net Zero: expanding into the USA

Ad Net Zero, launched in the UK in 2020 by the Advertising Association, the IPA and ISBA, is an initiative focused on decarbonising the advertising industry and encouraging the supply of advertising promoting more sustainable choices. Ad Net Zero is structured via its five-point action plan, providing the industry with a guide for its transition to net zero. This covers topics such as measurement and reducing emissions, science-based target setting, industry training and spotlighting work that is changing consumer behaviour by encouraging sustainable products and services. Currently collaborating with over 100 supporters in the UK and 25 supporters globally, the initiative covers all corners of the advertising ecosystem, across agencies, brands, media owners, platforms and industry bodies.

Advertising operates across borders. The scale and importance of the United States, by far the largest advertising market at 40% of global spend, makes it key to progressing global net zero targets. Ad Net Zero USA (ANZ USA) launched in February 2023. The initiative is currently in a growth phase, raising awareness through working groups and broader conversation – positioning the need to report emissions and decarbonise as an upcoming regulatory and business necessity. With reach across the advertising ecosystem, including corporations (e.g. Reckitt and Unilever), agencies (e.g. Assembly Global), and tech companies (e.g. OpenX and Sharethrough), and anticipating a near tripling of supporters by the end of 2023, ANZ USA has a unique platform to serve the advertising community by advocating for net zero and implementing shared emissions measurements and reporting standards. It also has long term aims of unifying the industry around the importance and urgency of a common goal of emissions reduction as a standard operations business practice moving forward.

WPP: leading scope 3 accountability

WPP is the first in the advertising industry to include media in its net zero commitment,[47] an encouraging but necessary move for the world's largest agency-holding group. In 2021, WPP set near-term science-based targets to halve net zero carbon emissions across scope 1 and 2 by 2025, and scope 3 by 2030, in line with limiting warming to 1.5°C.[48] This commitment includes the media WPP buys on behalf of clients, which accounts for over half of its total supply chain emissions.

WPP has made encouraging progress toward this target—in 2022, 83% of electricity bought was from renewable sources, up from 74% in 2021. In absolute terms, it made a 71% reduction in combined scope 1 and 2 tCO2 emissions from a 2019 baseline. These efforts have been recognised with an A- climate change score from the CDP, maintained for the second year in a row and much improved from a D in 2011. Where WPP or its companies purchase carbon offsets—at times necessary—those offsets must comply with standards such as Verified Carbon Standard or Gold Standard and offset services to clients are accounted according to the GHG protocol.[49]

The majority of WPP's scope 1 emissions, 64%, stem from company cars. In response, it is aiming to reduce the size of its fleet and transition to electric and hybrid cars—in 2022, 30% of centrally leased company cars were electric or hybrid vehicles, an increase from 24% in the prior year. We note that WPP does not include locally contracted cars as there is limited data available, but it estimates these emissions by extrapolating from the centrally contracted emissions.

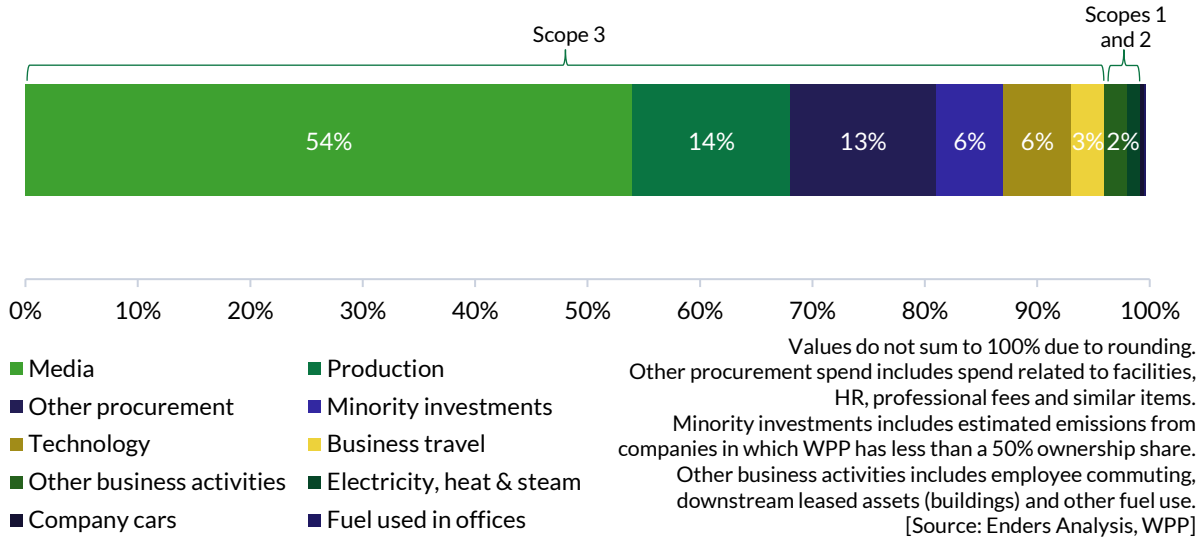
WPP follows both RE100 Technical criteria and GHG Protocol 2 Guidance to ensure high-quality reporting of its scope 2 emissions. WPP membership of RE100 is a key component of its scope 1 and 2 targets—through this initiative, it is committed to using 100% renewable electricity by 2025. WPP is moving to fewer, larger and more energy-efficient offices—investing in at least 65 net zero campuses for 85,000 employees by the end of 2025, which will operate purely on renewably sourced electricity. WPP's London operation will consolidate employees to three campuses, part of a global strategy that is improving efficiency on its own sites. Moving from leased offices to centrally-owned campuses provides WPP with greater control over decision-making on matters such as where energy is sourced. WPP has partnered with technology company Cisco to create 'smart' offices that generate efficiencies across power consumption, heating, and air conditioning—in one London office they have already cut total energy consumption by 27%, and WPP suggests that globally the monitoring of offices will reduce 86 kilotons of CO2 emissions.[50] In the Rose Court office, WPP has consolidated 200 data centres into eight, and increased the use of cloud computing, powered by renewable electricity, to reduce its energy consumption. The UK campuses are redeveloped buildings—WPP notes that converting older buildings will be essential to the UK's strategy in transiting to a low-carbon economy.

WPP discloses scope 3 figures to CDP, though there is somewhat limited visibility, as its breakdown in its 2022 sustainability report dates to 2019 (Figure 8), and it only includes business air travel in its publicly available statutory information. WPP notes that downstream scope 3 emissions such as the use and disposal of products it creates, as well as views of advertising and media, are not yet as consistently measurable, a challenge faced by the wider industry.

Improving measurement remains a priority for WPP, with scope 3 a particular challenge due to fragmented supply chains, differing applications of the Greenhouse Gas Protocol, and low levels of data granularity and quality. WPP estimates that the majority of its carbon footprint is from media (55% in 2019).

[47] WPP, 'WPP makes industry-leading net zero commitment', 22 April 2022.
[48] WPP, WPP sustainability report 2022, 2023.
[49] WPP, WPP Environmental Policy, 2023.
[50] WPP, 'WPP's sustainable vision delivered through smart tech', 2022.

Figure 8: WPP's CO2 emissions, 2019



Values do not sum to 100% due to rounding.
Other procurement spend includes spend related to facilities, HR, professional fees and similar items.
Minority investments includes estimated emissions from companies in which WPP has less than a 50% ownership share.
Other business activities includes employee commuting, downstream leased assets (buildings) and other fuel use.
[Source: Enders Analysis, WPP]

Since 2022 WPP's subsidiary GroupM has been developing a methodology for calculating media emissions. It has formed a coalition of the world's leading advertisers, worth over $10 billion, to establish an open-source carbon calculator, to standardise reporting of media emissions and accelerate the decarbonisation of the world's media supply chain. GroupM has developed omnichannel capabilities for the calculator: the next phase is to integrate it into the company's vendor management system so ad buyers can factor emissions into their choice of vendor.

WPP is also a founding member of AdGreen, an initiative that brings together the advertising industry to reduce the negative environmental impacts of production. AdGreen provides free training and other educational resources to reduce emissions, as well as a renewable energy buy-in scheme. In-house, WPP's production agency Hogarth has been developing its virtual production capabilities to lower its emissions, which currently account for 14% of WPP's total.

Bertelsmann: 'be green' ambition

Bertelsmann is a media, services, and education company that operates in about 50 countries around the world and its ever more ambitious ESG agenda responds to the expectations of stakeholders. The eight priorities of the latest ESG Programme (2021-2023) are: creative/journalistic independence and freedom of expression; content responsibility; fair working conditions; diversity, equity and inclusion; health and well-being; learning; responsibility in the supply chain; and climate change. Bertelsmann reports annually on its sustainability progress and as a participant in the UN Global Compact since 2008.[51]

The "Bertelsmann Climate Neutral 2030"[52] commitment spans the Group, including entertainment group RTL, book publisher Penguin Random House, music company BMG, and B2B services, printing and education companies. In 2019 the Group launched its "green.screen" platform to standardise cross-divisional climate accounting: a challenge in such a diversified business. Divisions and companies develop and implement climate policies in line with Bertelsmann targets and a centralised 'be green' working group facilitates dialogue between divisions. Annual climate strategy meetings bring together division heads and the Group's Executive Board.

The "Bertelsmann Climate Neutral 2030" strategy (Figure 9) includes a 50% reduction in GHG emissions by 2030 from 2018, in line with global climate action goals, for its own employees, sites and products (in

[51] Bertelsmann, GRI Report 2021.
[52] Bertelsmann, Climate Neutral by 2030, accessed 12 May 2023.

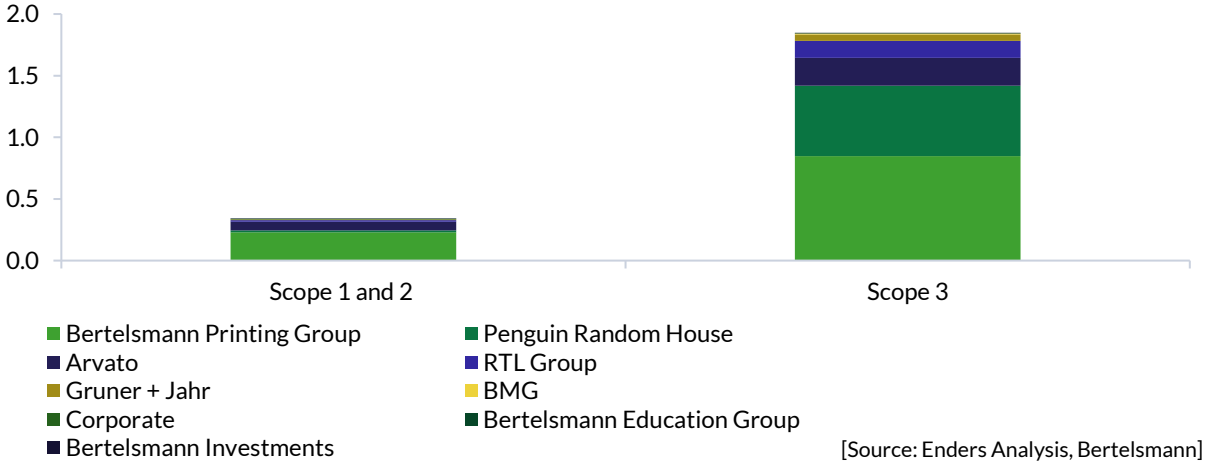
2018 emissions were 1.3 million tCO2e; by 2021 this had reduced 15% to 1.1 million tCO2e). Bertelsmann has a general target to use 100% renewable energy. Its strategy for remaining emissions relies on offsetting, where Bertelsmann prioritises long-term projects. Bertelsmann's emissions reduction targets have been validated by the (SBTi).

Figure 9: Bertelsmann's climate business plan

[Source: Bertelsmann]

Print is the most emissions-heavy part of Bertelsmann's business (Figure 10). Most of Bertelsmann's scope 1 and 2 energy-related emissions arise out of its printing business (recently renamed Bertelsmann Marketing Services, formerly Bertelsmann Printing Group). Supply chain logistics as part of Arvato's B2B services are another relatively heavy contributor to emissions. The print business also accounts for a large portion of the Group's reported scope 3 emissions, with a 71% contribution in 2021, including paper procurement, printing materials, services, and TV content production. Establishing measurement standards is a challenge across the industry. RTL, for example, established a Climate Task Force from 2021 to share knowledge on carbon footprint measurement.

Figure 10: Bertelsmann's 2021 emissions (million tCO2e)



[Source: Enders Analysis, Bertelsmann]

Bertelsmann's media companies play a society-leading role on coverage of the environment, in line with the interests and values of its audiences for its media products. Recent highlights include:

- In France, the *Semaine Green* (Green Week) of Groupe M6 in February 2023 was the fourth edition in a row, offering a week of programming entirely dedicated to the environment across all TV channels, streaming service 6play, and RTL Radio France, attracting a TV audience of 32.4 million, including about half of all viewers aged 25-34[53]
- RTL Deutschland also offers "green weeks" of multi-channel programming since 2019, and the 2022 edition in October featured energy and consumer solutions to reduce usage and waste. RTL Nederland launched its first green week in November 2022 during Dutch National Climate week addressing the topic of plastic pollution
- Penguin Random House publishes the top authors in the genre of climate change,[54] as well as the 21-volume series of 'Green Ideas' showcasing visionary voices on the relationship of humans to nature, from art, literature, food and gardening, to technology, economics, politics and ethics[55]

Vivendi: decarbonising on a large scale

Vivendi's latest Group-level Corporate Social Responsibility (CSR) agenda, *Creation for the Future* (*Creation for the Planet*, *Creation for Society* and *Creation with All*), was rolled out in 2021. The three pillars are: protecting the planet; imagining the society of tomorrow; and achieving diversity and inclusion. The CSR agenda spans the decarbonisation of operations and supply chain, and the mobilisation of its media touchpoints—news, magazines, books, advertising, games and video—to distribute responsible content to its audiences in the 80 countries served by the Group.

The Group's carbon-emission reduction plan, covering almost 70% of its emissions, has been independently validated by the SBTi and graded by the CDP.[56] Scope 1 and 2 targets are for a 71% reduction in emissions by 2035 relative to 2018, building on the 10% reduction achieved between 2021 and 2022. The Group is aiming to achieve 100% renewable energy by 2030. For scope 3, Vivendi is committed to achieve by 2035 a 43% reduction in emissions of business operations and investments, and a 23% reduction for leased assets. The Group is also committed to ensuring that 85% of its suppliers will have science-based targets for their emissions by 2026.

CDP awarded the Group an A- rating in 2022, compared to a C in 2021, despite tighter criteria. Vivendi is thus a best practice leader of its industry, whose participating businesses score on average a B.

Vivendi's media touchpoints have exceptional reach. In France, about 80% of adults read Prisma Media magazines (including *National Geographic* and *GEO*, which often feature environmental topics each month), Canal+ has 9.5 million subscribers, and Group websites rank third in the number of unique users per month (behind Meta and Alphabet properties). Outside France, Canal+ has a further 16 million subscribers (50 markets), and enjoys a 45% audience share in its African markets (7.6 million subscribers).

The production of responsible content is underpinned by a three-pronged programme: training for employees that occupy creative roles (over 3,100 hours in 2022 alone), a framework to evaluate content, and the measurement of outcomes.

Vivendi became the principal media partner of Plastic Odyssey in March 2023.[57] Dedicated to preventing the dumping of plastic waste in the ocean, some 19 tonnes every minute, the vessel Plastic Odyssey is on

[53] Médiamétrie, *Bilan de la Semaine Green 2023*, 17 February 2023.
[54] Penguin Random House, 'Books About Climate Change', accessed 12 May 2023.
[55] Penguin Random House, 'Green Ideas', accessed 12 May 2023.
[56] Vivendi, 'Vivendi reaches new milestones in its environmental approach: its emissions reduction plan has been validated by SBTi and its CDP score raised to A-', 23 March 2023.
[57] Vivendi, 'Vivendi mobilises all its businesses to support Plastic Odyssey', 16 March 2023.

a three-year journey across three continents.[58] At its stopovers, the team promote on-land treatment, such as recycling. To disseminate the mission of Plastic Odyssey, the Group is mobilising its media touchpoints. Canal+ will produce a documentary for TV broadcast in the autumn and will broadcast a web series on the digital media platforms Les Eclaireurs and Dailymotion. Prisma Media will produce print and digital magazine content, CanalOlympia will host screening and discussion events in cinemas in Africa, and Havas will provide its expertise to Plastic Odyssey, with further actions both planned and to be announced. Multi-channel distribution is a key strength, crucially acting as an impact accelerator.

This partnership exemplifies the Group's own approach to plastic waste. The latest generation of set-top boxes used by Canal+ (the group's primary user of plastic) is made with more than 95% recycled plastic, while the boxes themselves are now smaller, which has decreased their manufacturing carbon footprint by 40%. In France and Africa, set-top boxes are collected, recycled and reconditioned to reduce the need for new plastic materials.

Sky: championing transformational change

Sky was the first media company to go carbon neutral in 2006. In 2020, the business published its science-based net zero target to halve absolute emissions across its value chain by 2030 and support nature-based solutions to absorb carbon that can't be cut—yet. Achieving this ambition will require transformational change for the business and its value chain, a process Sky is already undertaking.

Sky has strong foundations that have set the business on track to reach its net zero target across scopes 1 and 2, with a 36.4% reduction in direct carbon emissions from 2018-2021. All sites are powered by 100% renewable electricity, zero waste is sent to landfill, and the business has a growing electric fleet.

Sky is investing in infrastructure projects that are fit for the future by targeting BREEAM Outstanding standards for new buildings. Sky Studios Elstree, for example, is aiming to be the most sustainable film and TV studio in the world. The site will use only renewable electricity, a significant portion of which will be generated by over 15,000m^2 of photovoltaic panels on building roofs, with any additional energy required sourced renewably. Sky will have a fleet of electric buggies for logistics, harvest rainwater for recycling and encourage sustainable transport methods to site by providing hundreds of bicycle and electric vehicle parking spaces, and running an electric shuttle bus to nearby public transport stations.

Looking beyond scopes 1 and 2, Sky takes a product life cycle approach to calculating scope 3 emissions, allowing the business to target individual products with the greatest potential for GHG emission reductions. Sky calculates the life cycle emissions of all electronic products placed on the market to inform its strategy for calculating and reducing scope 3 emissions. This work is reinforced by Life Cycle Assessments and Sky's commitment to embedding sustainable design principles within its product development strategy, from increasing energy and material efficiency to ensuring all products and their components can be reused, repaired and then recycled at end-of-life. These commitments have been brought to life with the 2021 launch of Sky Glass, the first TV certified under the CarbonNeutral Protocol, and 2022 launch of Sky Stream, the business' most energy-efficient TV product ever.

Along with other leading technology companies, Sky has formed a secretariat led by global climate consultancy the Carbon Trust, to tackle internet-connected device emissions. Together, the group will develop the industry's first specification for measuring, accounting for, and decarbonising the emissions associated with customer use of connected devices.

When it comes to customers, as a signatory of the Climate Content Pledge, convened by albert, Sky has committed to using its content to inspire and inform sustainable choices and behaviours. From launching the *Weekly Climate Show* on Sky News, our dedicated show on the climate crisis, to harnessing the power of sport by integrating climate and sport-related content to engage a wider range of people on what they

[58] Plastic Odyssey, 'Stopovers of the Expedition against plastic pollution', accessed 12 May 2023.

can do to help, Sky is mobilising millions through its content and Sky Zero campaign messaging. For example, in 2021, Sky and Tottenham Hotspur worked together to deliver Game Zero, the world's first elite level net zero carbon football match. Game Zero provided a blueprint for teams and athletes around the world as they look for ways to reduce their environmental impact and inspire fans to be part of the journey.

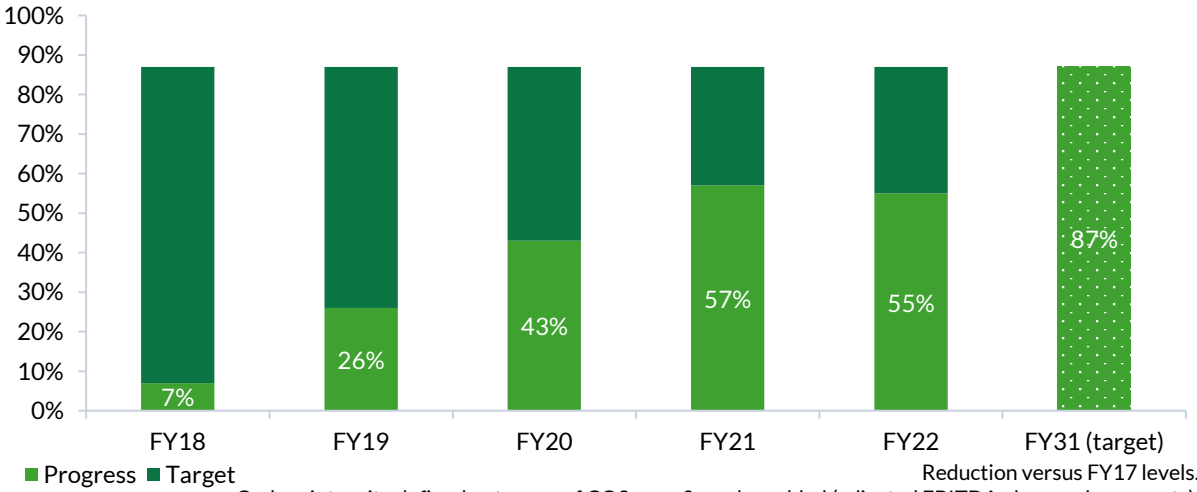
BT Group: addressing supply chain emissions

In September 2021, BT Group brought forwards its net zero target date by 15 years—it now aims to be net zero in carbon emissions across scope 1 and scope 2 by end of March 2031. It is aiming to be net zero across its supply chain and customer emissions (scope 3) by end of March 2041.

Close to 80% of BT's scope 1 emissions are from its fleet of over 30k vehicles. It is working to transition from diesel and petrol fuelled vehicles to ones that run on electricity or alternative fuels by 2030. While there are barriers to an entirely electric fleet—particularly a limited supply of vehicles and charging infrastructure, as well as uncertainty around the level and availability of government grants—in 2020, BT Group and Openreach set up the UK Electric Fleets Coalition with the Climate Group and have since been joined by some of the UK's largest fleet operators to advocate for the phase out of diesel and petrol vehicles and highlight the importance of policies to support EV take-up in commercial fleets.

The majority of BT Group's carbon footprint (70%) is from its supply chain, which it is tackling. It has begun building a clause into its commercial contracts with suppliers, which states that suppliers must provide proof of carbon savings as one of the deliverables of the contract—as of March 2022 it had ten suppliers signed up. BT Group has also encouraged suppliers to report to the CDP— and in 2022, 59% of its suppliers by total spend did so. Initiatives like these have allowed it to reduce its supply chain emissions by 28% on 2016/17 levels (Figure 11). BT Group has also encouraged its suppliers to have similar conversations with *their* suppliers—56% of BT Group's suppliers who reported to CDP in 2022 said that they were doing so—leading to a greater chain of companies taking steps to reduce their carbon footprint.

Figure 11: BT percentage reduction in carbon emissions intensity



Reduction versus FY17 levels.
Carbon intensity defined as tonnes of CO2e per £m value added (adjusted EBITDA plus employee costs).
[Source: BT, Enders Analysis]

BT Group is also working to help its customers use its products and services to reduce their own emissions—it aims to help customers avoid 60 million tCO2e emissions by 2030. For its B2B customers it has a number of solutions on offer. For example, in 2022 it partnered with QiO to launch an AI-powered product which will help customers to optimise their energy usage. It also offers a Carbon Network Dashboard, which gives customers a consolidated view of the carbon emissions and power usage of their IT systems. On the consumer side, it is working to encourage more sustainable consumption of mobile

handsets, offering repair programmes and annual device check-ups, along with a trade-in scheme for used handsets.

BT Group uses nearly 1% of the electricity supplied by the UK grid, and in November 2020 completed a switch globally to 100% renewably sourced electricity. This has reduced its scope 2 emissions, which are now 99.96% lower than they were in 2008. It has also signed a number of power purchase agreements (PPA), ensuring longer-term certainty of supply for the company and supporting growth in the overall UK grid renewables supply.

However, BT Group is still taking steps to reduce its electricity usage as it wants to ensure that there is a sufficient supply of renewably sourced electricity for other companies to decarbonise too. One way it is doing this is through its workplace transformation programme—under this, BT Group is consolidating hundreds of UK building locations to around 30 locations, selecting new premises and redesigning a number of its existing locations. Throughout the process BT Group is ensuring that new and redesigned offices meet its net zero ambitions: using electric heating instead of natural gas and harvesting rainwater where possible. It estimates that its new headquarters, One Braham, will save over 3 million kWh of energy each year versus its old building. Many of its locations also have bike storage and showers to encourage employees to commute to work in carbon-free ways, such as cycling, walking, or running.

Virgin Media O2: equipment efficiencies and reuse

Virgin Media O2 (VMO2) is aiming to achieve net zero carbon emissions across its operations, products, and supply chain by the end of 2040, and it is aiming to have reduced its scope 1 and 2 emissions by 90% versus 2020 levels by 2030. It was the first telecoms provider to achieve the Advancing Level of the Carbon Trust's Route to Net Zero standard for its work to reach net zero, and it is a member of the Media Climate Pact, signatories of which pledge to use their platforms to highlight the urgency of the climate crisis to consumers. Since the merger of Virgin Media and O2 in 2021, the company has worked hard to ensure clear and consistent disclosure, and it will report a full breakdown of its emissions as a merged entity in the coming weeks.

In 2022 VMO2 reduced its carbon emissions across scope 1 and 2 by 29% versus 2020—putting it on track for its interim target of 60% reduction by 2025. VMO2 uses renewable electricity everywhere that it is directly responsible for the bill. It is also working on reducing its overall electricity consumption by measures such as: decommissioning legacy equipment, using more efficient equipment; and implementing site monitoring capabilities so it can optimise site cooling. These efforts reduced market-based scope 2 emissions by 27% versus 2021 in 2022. In tackling scope 1, VMO2 is aiming to electrify its fleet of 4,000 vehicles by 2030—while it is seeing challenges due to global supply chain issues, it onboarded its first 76 vehicles in 2022.

In addressing scope 3 emissions, VMO2 is working with all its suppliers to tackle emissions. Regardless of size, all of VMO2's suppliers must agree to certain decarbonisation commitments in contracts they make with the company. While most of its larger suppliers already have their own net zero targets in place, VMO2 supports smaller suppliers to ensure they have the tools they need to get started on their decarbonisation journey.

VMO2 has set a target of facilitating 10 million 'circular actions'—such as recycling and refurbishing handsets and CPE—by 2025. In 2022 alone it enabled 2.4 million actions. O2 Recycle—its handset trade-in scheme—has recycled 3.8 million devices since 2009, with zero going to landfill. The company takes a reuse-first approach—in 2021 it accepted 1.6 million units of customer equipment and refurbished 83% of them. It is also working to make refurbished devices an attractive first option for customers, rather than merely a cheaper option.

In July 2021 VMO2 issued Green Bonds to fund projects related to its sustainability targets, raising £1.7 billion. By December 2021 it had allocated almost £1 billion of this to energy efficiency projects.

Appendix

Table 1: SBTi approved emissions and net zero targets, selected TMT companies

Company	Targets set	Target
BBC	**Near-term** ✓ **Long- term** **Net-zero** Committed	The British Broadcasting Corporation commits to reduce absolute scope 1 and 2 GHG emissions 46% by FY2030/31 from a FY2019/20 base year. The British Broadcasting Corporation also commits to reduce absolute scope 3 GHG emissions 28% over the same timeframe.
Bertelsmann	**Near-term** ✓ **Long- term** **Net-zero**	Bertelsmann commits to reduce absolute scope 1, 2 and 3 GHG emissions 50% by 2030 from a 2018 base year.
Bloomsbury	**Near-term** ✓ **Long- term** **Net-zero**	Bloomsbury Publishing Plc commits to reduce absolute scope 1 and 2 GHG emissions 46% by FY2030 from a FY2020 base year. Bloomsbury Publishing Plc commits to reduce absolute scope 3 GHG emissions from purchased goods and services 20% by FY2035 from a FY2020 base year.
Dentsu	**Near-term** ✓ **Long- term** ✓ **Net-zero** 2040	Dentsu International commits to reach net-zero GHG emissions across the value chain by 2040. Near-Term Target Dentsu commits to reduce absolute scope 1, 2, and 3 GHG emissions 46.2% by 2030 from a 2019 base year. Long-Term Target Dentsu also commits to reduce absolute scope 1, 2, and 3 GHG emissions 90% by 2040 from a 2019 base year.
Financial Times	**Near-term** ✓ **Long- term** **Net-zero** Committed	The Financial Times Limited commits to reduce absolute scopes 1 and 2 GHG emissions 46.2% by 2030 from a 2019 base year. The Financial Times Limited also commits to reduce absolute scope 3 GHG emissions from purchased goods and services, upstream transportation and distribution, business travel, downstream transportation and distribution, and end-of-life treatment of sold products 46.2% within the same time frame.
ITV	**Near-term** ✓ **Long- term** **Net-zero** Committed	ITV commits to reduce absolute scope 1 and 2 GHG emissions 46% by 2030 from a 2019 base year*. ITV commits to increase annual sourcing of renewable electricity from 40% in 2019 to 100% by 2025. ITV commits to reduce absolute scope 3 GHG emissions 28% by 2030 from a 2019 base year. *The target boundary includes biogenic emissions and removals from bioenergy feedstocks
Netflix	**Near-term** ✓ **Long- term** **Net-zero** Committed	Netflix commits to reduce absolute scope 1 and 2 GHG emissions 46.2% by 2030 from a 2019 base year. Netflix also commits to reduce scope 3 GHG emissions 55% per million USD of value added within the same timeframe.
News Corp	**Near-term** ✓ **Long- term** **Net-zero** Committed	Global media company News Corp commits to reduce absolute scope 1 and 2 GHG emissions 60% by FY2030 from a FY2016 base year. News Corp also commits to reduce absolute scope 3 GHG emissions 20% over the same target period.

Sky Group	**Near-term** ✓ **Long- term** **Net-zero** **Committed**	Sky Group commits to reduce absolute scope 1, 2 and 3 GHG emissions 50% by 2030 from a 2018 base year. The target boundary includes biogenic emissions and removals from bioenergy feedstocks.
Sony	**Near-term** ✓ **Long- term** ✓ **Net-zero** **2040**	Sony Group Corporation commits to reach net-zero GHG emissions across the value chain by FY2040 from a FY2018 base year. Near-Term Targets Sony Group Corporation commits to reduce absolute scope 1 and 2 GHG emissions 72% by FY2035 from a FY2018 base year. Sony Group Corporation commits to reduce absolute scope 3 GHG emissions covering use of sold products 45% over the same target period. Sony Corporation also commits that 10% of its suppliers by emissions covering purchased goods and services, will have science-based targets by FY2025. Long-Term Targets Sony Group Corporation commits to reduce absolute scope 1, 2, and 3 GHG emissions 90% by FY2040 from a FY2018 base year.
STV	**Near-term** ✓ **Long- term** ✓ **Net-zero** **Committed**	This target was approved using a streamlined target validation route exclusive to small and medium-sized enterprises (SMEs). STV Group plc commits to reduce scope 1 and scope 2 GHG emissions 50% by 2030 from a 2018 base year, and to measure and reduce its scope 3 emissions. STV Group plc to reduce scope 1+2+3 emissions 90% by 2050 from a 2018 base year.
The Economist Group	**Near-term** ✓ **Long- term** **Net-zero**	The Economist Group commits to reduce absolute scope 1, 2 and 3 GHG emissions 25% by FY2025 from a FY2020 base year. The Economist Group commits to reduce absolute scope 1 and 2 emissions 68% by FY2025 from a FY2020 base year, and reduce absolute scope 3 GHG emissions 23% within the same timeframe. The Economist Group also commits to increase annual sourcing of renewable electricity from 0% in FY2020 to 100% by FY2025.
Vivendi	**Near-term** ✓ **Long- term** **Net-zero**	Vivendi SE commits to reduce absolute scope 1 and 2 GHG emissions 71% by 2035 from a 2018 base year. Vivendi SE also commits to increase annual sourcing of renewable electricity from 10% in 2018 to 100% by 2030. Vivendi SE further commits to reduce absolute scope 3 covering fuel and energy related activities, upstream transportation and distribution, waste generated in operations, business travel and downstream transportation and distribution and investment GHG emissions 43% by 2035 from a 2018 base year. Vivendi SE also commits to reduce absolute scope 3 covering downstream leased assets GHG emissions 21% within the same timeframe. Vivendi SE finally commits that 85% of its suppliers by emissions covering purchased goods and services, and capital goods, will have science-based targets by 2026.
WPP	**Near-term** ✓ **Long- term** **Net-zero** **Committed**	WPP plc commits to reduce absolute scope 1 and 2 GHG emissions 84% by 2025 from a 2019 base year. WPP plc also commits to reduce absolute scope 3 GHG emissions 50% by 2030 from a 2019 base year.

BT Group	**Near-term** ✓ **Long- term** **Net-zero** **Committed**	Multinational communications company BT commits to reduce GHG emissions* by 87% in tCO2e per unit of gross value added by 2030 from a 2016/2017 base-year. This is in line with current international policy and climate science, being BT's share of the global emissions reductions needed to limit global warming to 1.5°C. The company also commits to reduce supply chain GHG emissions** by 29% over the same time-period. *Here GHG emissions refer to scope 1 and 2 emissions, as defined in the Greenhouse Gas Protocol, expressed as tonnes carbon dioxide equivalent (tCO2e) per unit of gross value added (GVA). **Supply chain emissions refer to all upstream scope 3 emissions (categories 1-8), as defined in the Greenhouse Gas Protocol Scope 3 Standard.
Vodafone	**Near-term** ✓ **Long- term** **Net-zero**	Multinational technology communications company Vodafone commits to reduce absolute scope 1 and 2 GHG emissions 95% by FY2030 from a FY2020 base year. Vodafone commits to reduce absolute scope 3 GHG emissions 50% within the same timeframe. Vodafone also commits to increase annual sourcing of renewable electricity from 26% in FY2020 to 100% by FY2025.
Apple Inc	**Near-term** ✓ **Long- term** **Net-zero**	Apple, Inc. commits to reduce absolute combined scope 1, 2 and 3 GHG emissions 62% by FY2030 from a FY2019 base year. Apple also commits to continue annually sourcing 100% renewable electricity through FY2030. **The target boundary includes biogenic emissions and removals from bioenergy feedstocks.
AutoTrader	**Near-term** ✓ **Long- term** ✓ **Net-zero** **Committed**	Overall Net-Zero Target Auto Trader commits to reach net-zero greenhouse emissions across the value chain by FY2041 from a FY2020 base year. Near-Term Targets Auto Trader commits to reduce absolute scope 1 and 2 GHG emissions 50% by FY2031 from a FY2020 base year. Auto Trader also commits to reduce absolute scope 3 GHG emissions 46.2% over the same time frame. Long-Term Targets Auto Trader commits to reduce absolute scope 1, 2 and 3 GHG emissions 90% by FY2041 from a FY2020 base year.
Microsoft	**Near-term** ✓ **Long- term** **Net-zero** **Committed**	American multinational technology company Microsoft commits to continue annually source 100% renewable electricity through 2030. Microsoft also commits to reduce scope 3 GHG emissions intensity per unit of revenue 30% by 2030 from a 2017 base year and to avoid growth in absolute scope 3 emissions.
Snap Inc	**Near-term** ✓ **Long- term** **Net-zero**	Snap Inc. commits to reduce absolute scope 1 and 2 GHG emissions 25% by 2025 from a 2019 base year. Snap Inc. also commits to reduce scope 3 GHG emissions from purchased goods and services, business travel and use of sold products 35% per unit of value added by 2025 from a 2019 base year.

Excludes companies committed to SBTi's targets, but whose targets are not yet validated (Paramount, TalkTalk, Alphabet, Twitter).
[Source: SBTi, Enders Analysis]

Table 2: Most recent CDP ratings, selected TMT companies

Company	Climate Change	Forests	Water Security
BBC	B		
Bertelsmann	B		
Bloomsbury	B		
Dentsu	A-		
ITV	A		
News Corp	B	B	
Paramount Global	B	C	
Sky Group	B		
Sony	A		A-
Vivendi	A-		
WPP	A-		
BT Group	A		
TalkTalk	B		
Vodafone	A		
Alphabet	A		
Apple	A-		
Auto Trader	C		
Meta	B		
Microsoft	A		A-
Snap	A		
Twitter	B		

Excludes companies that have not responded to the CDP (Financial Times, Netflix, STV, The Economist Group).
[Source: CDP, Enders Analysis]

About Enders Analysis

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