ENDERS | ANALYSIS

COP26 to COP27

TMT leading the way

- The Glasgow Climate Pact agreed at COP26 sets out national pledges to achieve net zero and contain global warming to 1.8°C above its pre-industrial levels—COP27 will buttress pledges, now at risk from the energy crisis, and advance some nations to 2030
- The TMT sector is a leader on net zero in the private sector. Companies that measure their end-to-end carbon footprint throughout their supply chain—as many do in the UK's TMT sector—can target their GHG emissions
- The TMT sector underpins the UK's vibrant digital economy that enables hybrid work-from-home (WFH), which reduces fossil fuel use thus heading off both the energy crisis and the climate crisis

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COP 26 to COP27: ambition and urgency

COP26, hosted by the UK in 2021, resulted in the Glasgow Climate Pact.[1] The Pact consists of new climate pledges by 153 nations to the United Nations Framework Convention on Climate Change (UNFCCC), whereby countries responsible for 75% of global greenhouse gases (GHGs) committed to reach net zero between 2050 and 2070. In relation to the pledges made at the 2015 Paris Agreement, the Pact in principle brings global warming below the 2°C upper limit for the first time, and, if pledges are carried out, to 1.8°C above pre-industrial levels.

Although COP 26 also "kept alive" the 1.5°C goal to limit more adverse effects of climate change, GHGs must be reduced by 45% from 2010 levels by 2030 to reach that target. Governments thus also agreed at COP26 to consider advancing their net zero target dates from 2050 to 2030, a prime focus for COP27 in November 2022 in Sharm El-Sheikh, Egypt.

A recent report on the effects of climate change issued by the Intergovernmental Panel on Climate Change (IPCC)—the authoritative scientific voice of the UNFCCC—is sobering.[2] It underscores the importance of the Glasgow Climate Pact: **GHGs increased on average by 1.3% in the period 2010-19, putting the world on track to be 3.2°C warmer by 2100 in the absence of climate policy actions**.

The International Energy Agency (IEA) reported that the COVID-19 pandemic severely depressed energy demand in 2020, reducing global CO_2 emissions by 5.2%. That decline was more than reversed in 2021 by the world economic recovery (GDP rose 5.9%), with CO_2 emissions rising by 6% to their highest ever level. The IEA warned that climate change was also a driver of CO_2 emissions in 2021 due to colder winters, hotter summers and drought reducing the supply of hydropower.

According to a new tracker, approximately 80% of the global economy—and 77% of GHGs—are covered by legally binding net zero targets; if only strong commitments and plans are included, these numbers shrink considerably, Oxford Net Zero estimates, to 10% and 5% respectively.[3] Clear and transparent targets are essential in the move to decarbonise. It is estimated that, **over the next decade, transitioning to a zero-carbon future offers the opportunity to create 35 million jobs and $26 trillion in economic benefits in comparison to the current high carbon scenario**. Despite the challenges posed by the COVID-19 pandemic, it is estimated that net zero commitments nearly doubled in 2020, with corporate commitments in the Race to Zero campaign covering over 12% of the global economy and representing $9.81 trillion in revenue.[4]

The UNFCCC's Race to Zero campaign seeks to marshal leadership and support from businesses, cities, regions, and investors for net zero. The Information and Communication Technology (ICT) and telco sectors are two of 15 sectors that have met the "Breakthrough Ambition" challenge set out by the UNFCCC to accelerate transformation to a more resilient, zero carbon world.[5] As a percentage of revenue in the sector, over 40% of the ICT sector and 33% of the telco sector are committed to the Race to Zero initiative.[6] To provide a framework for the private sector, the Science Based Targets initiative (SBTi)[7] gives businesses a means to this end. We report below on TMT businesses operating in the UK that have joined this initiative, auditing and monitoring their carbon footprint to provide reliable information to employees, shareholders and stakeholders (Figure 6).

[1] 26th UN Climate Change Conference of the Parties: UK 2021.
[2] Climate Change 2022: Mitigation of Climate Change, IPCC report, April 2022.
[3] Oxford Net Zero, November 2021.
[4] UNFCCC, Race to 2030 Breakthroughs, September 2021.
[5] Race to Zero.
[6] techUK report, Climate Tech: The Innovators, November 2021.
[7] Science Based Targets Initiative (SBTi).

Total energy use in the TMT sector is between 2-3% of global energy consumption. Energy is a major expense for the industry, accounting for the third-largest network-related cost for operators, with electricity costs ranging between 1-2% of revenue. To this end, the ICT and mobile sector breakthrough outcomes are for 80% of industry electricity use to come from renewables by 2030 and 100% by 2050.

Reducing energy consumption allows the TMT sector to meet its sustainability goals whilst improving the bottom line; it makes financial sense to go green. Corporate sustainability reporting aims to inform investors of this reality. At COP26, the UK government joined 40 international partners from six continents to establish the IFRS Foundation's International Sustainability Standards Board (ISSB). This new organisation has a work programme to develop a unified set of international standards for disclosure of sustainability-related information for capital markets to assess enterprise value. Enhanced information from companies on sustainability-related risks and opportunities is a necessary step to allow investors to make more informed decisions on the financial impacts of climate change on a company's value. A common set of disclosure standards will go a long way to incentivise improved environmental, social and corporate governance (ESG) outcomes.

Reducing energy consumption allows the TMT sector to meet its sustainability goals whilst improving the bottom line

According to the International Renewable Energy Agency (IRENA), renewable energy supplies continued to grow, with the stock of global renewable power increasing by 9% in 2021.[8] Despite supply challenges due to the significant investment required for renewables, demand is growing and renewables have never been cheaper, with prices decreasing continuously since 2010. In the UK, renewables accounted for 43% of electricity generation and around 6% of energy supply in 2020. The objective is for 100% of electricity to come from renewables by 2035.

However, geopolitical complications must be factored in to plans for long-term investment in renewables, as supplies of lithium and other heavy metals come under threat from sanctions and supply chain issues. Raw materials, which are crucial for the production of EV batteries and development of other technologies that facilitate a path to net zero, are becoming political tools as the crisis in Europe develops. Platinum and palladium, which have applications including use in fuel cells, solar energy, and turbine blades, are both sourced in large part from Russia, and are increasingly sanctioned as a result: a roadblock to rapid or short-term scaling up of investment in renewables.

The task for COP27 in Egypt in November 2022 is to work to ensure Glasgow pledges are implemented with solid and credible policies on a trajectory to a net zero future. The 2030 target is also under consideration. This would be a challenge for the UK, which has a target—enshrined in law—of 78% reduction in GHG emissions by 2035, and net zero by 2050.[9] The unprecedented shift in the energy sector set out in the UK Balanced Net Zero Pathway envisages moving from fossil fuels to electricity (reaching 100% renewable by 2035).[10] Despite evidence of widespread support, there are no plans to put in place a carbon tax, which would go a long way to proper energy pricing.[11]

COP27 will take place amidst acute concerns regarding the impact of the energy crisis and economic slowdown on national trajectories to net zero.[12] Geopolitical tensions are likely to strain multilateral cooperation and deepen energy insecurity, worsened by Russia's war in Ukraine. The room for optimism resides in the resilience to the pandemic in countries with a strong TMT sector. There are new paradigms to be explored that leverage broadband and digital technologies as a foundation for how we work and live. **The TMT sector is taking a leadership role in the transition to a more sustainable world**.

[8] IRENA, World Energy Transitions Outlook: Pathway to 1.5C, March 2022.
[9] GOV.UK press release, April 2021.
[10] Sixth Carbon Budget: The UK path to net zero, Committee on Climate Change, December 2020.
[11] A Zero Carbon survey prior to COP26 found that two-thirds of the respondents supported the introduction of a carbon tax.
[12] techUK, Digital Economy Monitor Q1 2022 results, March 2022.

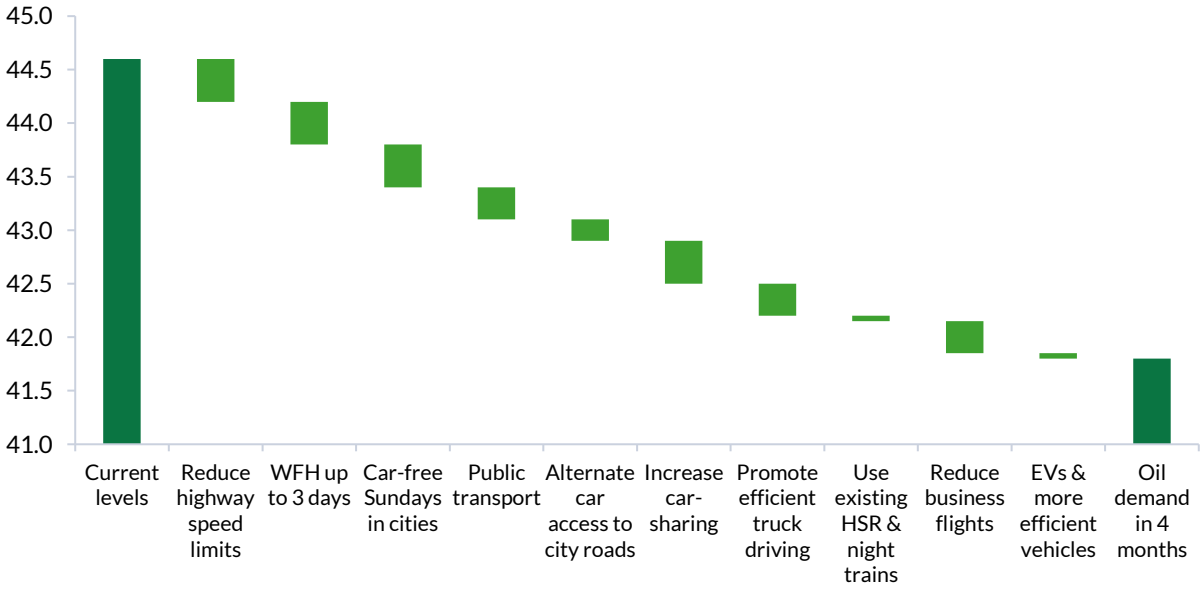
Energy in the time of war: crisis and innovation

Russia's invasion of Ukraine has crystallised the overlapping challenges of energy security and poverty, at a time when the existing crises of climate change and air pollution are becoming increasingly acute. **These challenges cannot be resolved in isolation; they share at their core society's extreme reliance on fossil fuel energy**. Our hope is that the major steps on energy taken out of necessity in the last months since Russia's war broke out will sustain longer-term change and innovation to advance the solutions that must be found to the climate crisis.

Despite only 8% of the UK's oil supply and none of its natural gas coming from Russia, the war has driven up their prices, inflicting extreme economic pain, impacting businesses first and then also consumers in multiple ways. On the business side, unshielded by Ofgem's price cap, producer input inflation in March was a record 19.2%, ensuring the energy price shock is felt across every corner of the economy. Not only has Ofgem raised the consumer energy price cap by 54% in April, but it is projected to rise another 40% in October, plunging 40% of households into fuel stress. Inflation, now forecast by the Bank of England to hit 10.2% in Q4 2022, has run rampant. **The UK's vulnerability to energy shocks is the result of long-term energy policy, which has turned away from nuclear energy to embrace renewables, but remains complacent with fossil fuels**, which provided 39% of the UK's electricity output in 2020.[13]

The European Union proposes to phase out Russian oil imports largely by the end of 2022—an unthinkable scenario just three months ago—and natural gas could be next. Crucially, the IEA's 10-Point-Plan sets out actions with immediate impact to reduce oil demand significantly within the next four months (Figure 1), to cool markets and economise on the scarce resource. The IEA suggests WFH up to three days a week, where possible.[14] The IEA estimates that commuting to work by private vehicles in advanced economies accounted for around 2.7 million barrels of oil per day; around one-third of these jobs can be done at home, without jeopardizing productivity.

Figure 1: Oil demand reductions in advanced economies within four months in the IEA 10-Point-Plan (mb/d)

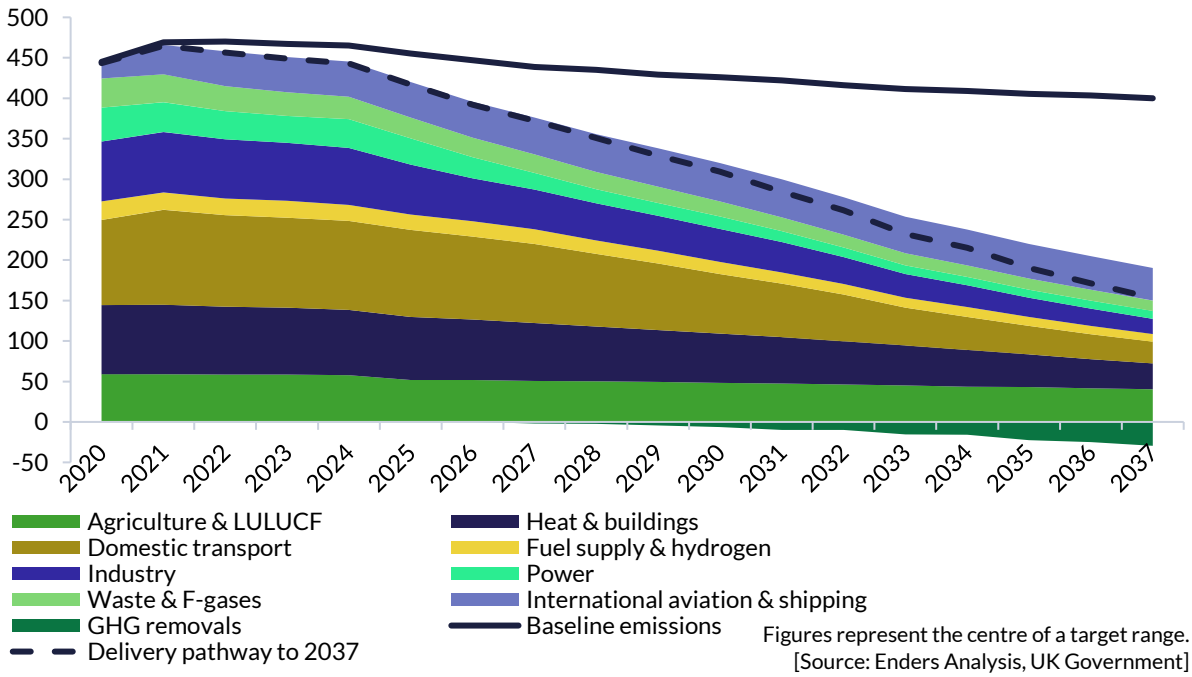


[Source: Enders Analysis, IEA]

[13] Renewables provided 43% and nuclear 16% of total electricity output. IEA, World Energy Balances Highlights, October 2021.
[14] IEA, A 10-Point Plan to Cut Oil Use, March 2022.

The UK Government identified in 2021 domestic transport as the most significant area for cutting emissions (Figure 2). The pandemic significantly reduced UK GHG emissions, especially due to the "profound changes" to travel and socio-economic activity, such as WFH. Transport emissions were cut by 19% in 2020, with the largest absolute reduction from road vehicle emissions. Estimates reveal the increase in CO_2 emissions in 2021 is driven by transport, up 10% year-on-year as society has returned to places of work,[15] despite mobility recovery stalling at c. 80% of pre-pandemic levels. Changing patterns of consumer expenditure and footfall will extend the disruption caused by pandemic uncertainty, but otherwise continue the established long-term trend of increasing online retail, with annual online retail share increasing from 8% in 2011 to 31% in 2021.

Figure 2: Indicative emissions delivery pathway by sector, UK ($MtCO_2e$)



Figures represent the centre of a target range.
[Source: Enders Analysis, UK Government]

WFH has proved sticky since its widespread adoption in 2020 saw an almost 10 percentage point increase in those who worked from home at least some of the time, to 37%. While the Civil Service and parts of the private sector have encouraged a return to the office, we advocate for widespread adoption of hybrid WFH for the long-term as an effective way to decarbonise work, and as a natural continuation of existing practices. The internet has supported a resilient workplace over two years of intermittent lockdowns and restrictions; embracing hybrid work offers further opportunities to improve our lives in a multitude of ways.[16]

A company's emissions can be divided into three broad 'scopes', which we discuss in further detail below in the context of UK TMT companies. Scopes 1 and 2, which broadly cover direct and energy-related emissions, can be more easily monitored and reduced, and are the source of 'easy wins' made through reducing transport burdens and green energy. A major part of scope 3, indirect downstream emissions, is employee transport: notably reduced through WFH, which also reduces expensive employee travel costs. **While WFH is not a panacea, it has proven to offer a promising work paradigm with a multitude of benefits, and should be encouraged.**

[15] Department for Business, Energy & Industrial Strategy, 2021 UK Provisional Greenhouse Gas Emissions, March 2022.
[16] Urban economist, Matthew Kahn, sets out the broader dynamics of WFH in *Going Remote: How the Flexible Work Economy Can Improve Our Lives and Our Cities*. University of California Press, 2022.

It is important to draw a distinction between carbon reduction and carbon offset. The latter is the aim of net zero, but does not necessarily require reductions in usage. Offsetting is a trade-off which involves companies funding external projects (e.g. afforestation) to counteract the effects of emissions, and is associated with fewer internal costs, making it an attractive option. However, reduction is the gold standard: the emissions are never released in the first place.

Despite the current economic challenges exacerbated by the forced nature of the divorce from Russian oil, it is the responsibility of businesses to ensure this becomes a long-term split from fossil fuel usage and not simply a shift to using fossil fuels from different sources. An opportunity is being provided to innovate towards clean energy in the medium-term and use the energy crisis as a catalyst for long-term change: a necessity to achieve net zero and keep alive the Paris Agreement's 1.5°C lower limit.

TMT businesses are leading the way to net zero

UK businesses across all sectors all can play a role in innovating products and services, investing and financing lower carbon alternatives in the transition to net zero. This decade is particularly critical, or the 2050 target will not be met. Combined, industry and business account for around 25% of the UK's GHG emissions, and 50% of UK electricity use.[17] **Measuring and reporting these emissions is a crucial step to meeting net zero targets.**

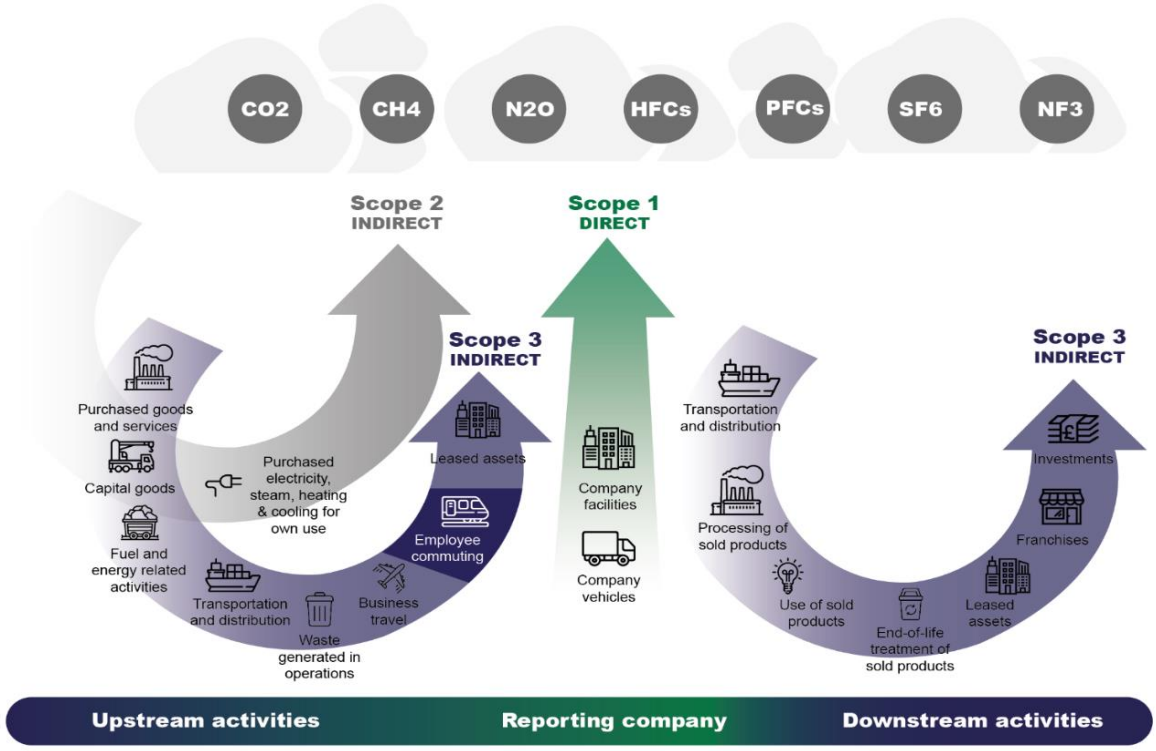
Some businesses[18] are required to make detailed mandatory climate disclosures.[19] Companies report GHG emissions that fall under one of three scopes (Figure 3). Quoted businesses are required to calculate scope 1 and 2 emissions, with scope 3 emissions left at their discretion.[20]

The three scopes are:

- Scope 1—Direct GHG emissions from activities owned or controlled by the business into the atmosphere (e.g. company vehicles running on petrol/diesel)
- Scope 2—Energy indirect 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 power office lighting)
- Scope 3—Other indirect emissions that are a consequence of the business' actions, which 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 or downstream (e.g. end-customer use of manufactured electronics)

[17] UK GHG emissions, final figures by end user based on UK national statistics 1990-2020, March 2022.
[18] 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 £36m; balance sheet total equal to or over £18m; 250 or more employees. Companies incorporated outside the UK (including foreign parent companies of UK subsidiaries) are not required to report.
[19] BEIS and DEFRA, Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, March 2019.
[20] 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.

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



[Source: Enders Analysis, Climate Change Committee]

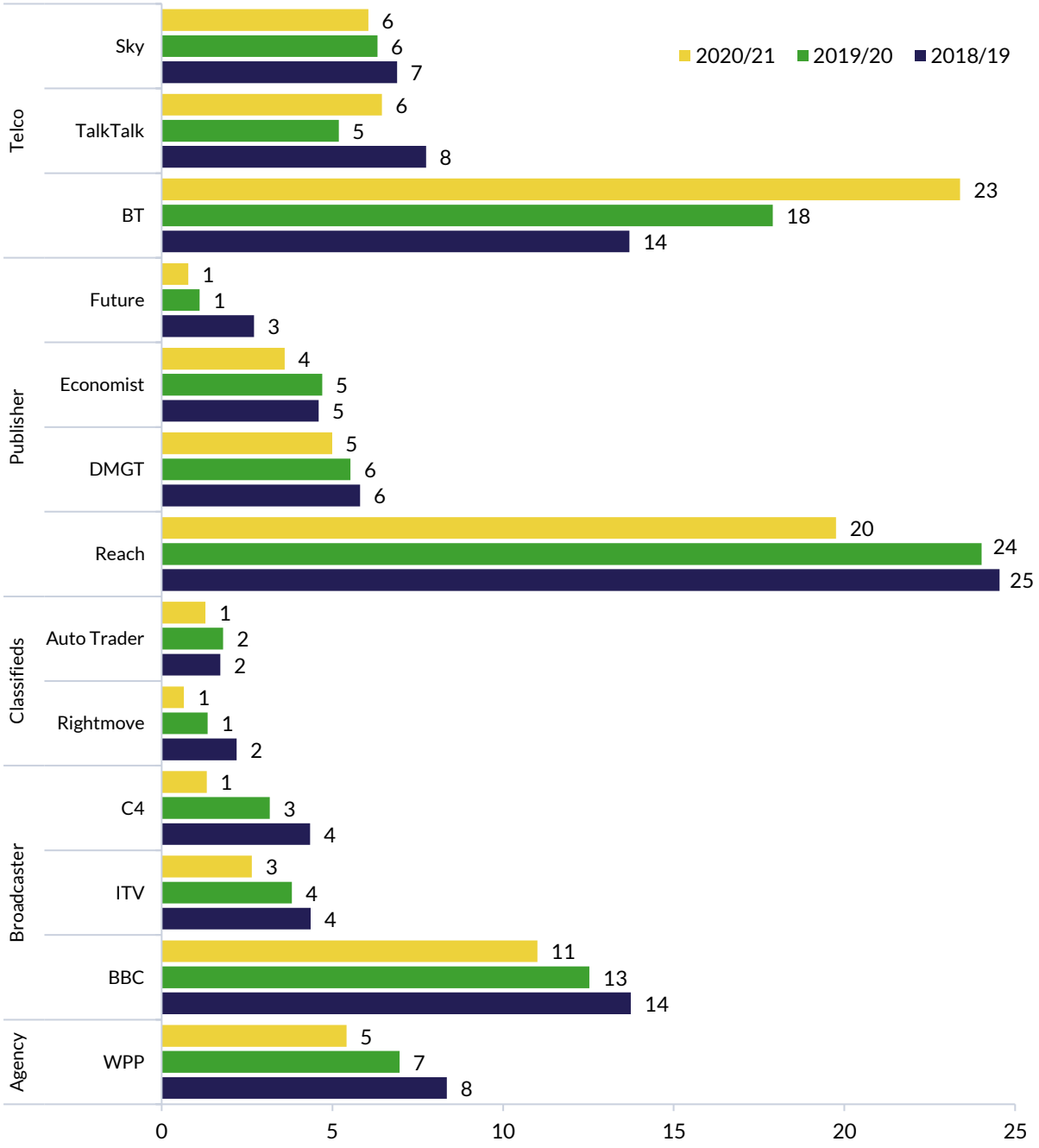
TMT businesses, highly innovative and visible, are rightly taking a leading role in the transition to net zero. Tracking a selection of TMT companies with significant UK operations, Figure 4 shows each company's carbon intensity ratio, presented as as equivalent tonnes of carbon dioxide (tCO_2e), for every £1m in revenue generated.[21] Nearly all companies have progressively reduced their emissions in their last three financial years.

The greatest source of scope 1 and 2 emissions for most TMT companies is energy consumption, mostly electricity. Many of these businesses have either transitioned, or are in the process of transitioning, to renewables. The pandemic-forced closure of offices reduced many businesses' energy consumption, therein presenting a risk that, if behaviours returned to pre-pandemic norms, emissions could rebound.[22] Channel 4 has realised the benefits of increased remote working, conducting virtual meetings in favour of in-person, with travel only if there is a business need and prioritising public transport where possible.

[21] We note that within their annual report disclosures, many of these companies choose to report on slightly different metrics that may more closely tally to the source of these emissions: Rightmove reports on tonnes of carbon per FTE; while Reach plc reports on the basis emissions per millions of pages printed. For the sake of comparability, we have chosen to use revenue as our denominator in our intensity ratio.

[22] An exception is Reach. Its gas usage (scope 2) increased in 2021 versus 2020 due to increased heating to offset increased ventilation requirements for COVID-19. However, scope 3 emissions across the period fell 23%.

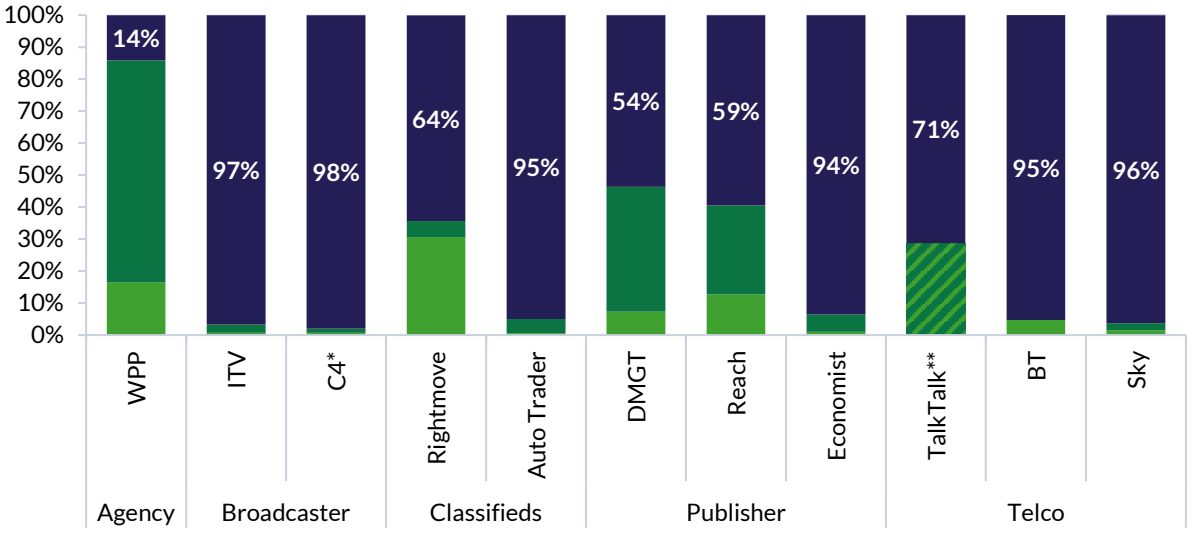
Figure 4: TMT carbon intensity ratio, scopes 1 and 2 (tCO_2e)/revenue (£m)



Most recent financial year reported, and two prior years.
Total global revenues and global emissions are used to reflect the entirety of the business's operations.
[Source: Enders Analysis, company reports]

Whilst reporting of scope 3 emissions is not yet a requirement for many businesses, many have chosen to measure and report in their most recent annual reports. As displayed in Figure 5, scope 3 accounts for the majority of a business' emissions, a possible barrier to wider adoption. Measuring a company's upstream and downstream emissions (scope 3) is much harder than evaluating only internal use (scopes 1 and 2), but much more holistic in terms of assessing a company's wider carbon footprint. Reducing scope 3 emissions requires companies to scrutinise suppliers and support them to adopt environmental practices or switch to greener alternatives. Media and tech companies have an obligation beyond their own operations to raise wider awareness through their publications, programmes and services.

Figure 5: Proportion of global emissions scopes 1, 2 and 3, most recent financial year



* C4 does not report a figure for scope 3 emissions but stated it is "98%" of all emissions.
**TalkTalk does not provide breakdown figures for scope 1 and 2 emissions.
[Source: Enders Analysis, company reports]

Whilst not all businesses are yet required to report on their carbon emissions, there is a **clear trend that companies that have measured their end-to-end carbon footprint throughout their supply chain are more likely to have set targets to reduce their GHG emissions.** In particular, TMT companies that are prepared for the now-mandatory disclosure of climate-related financial risk using TCFD-aligned (Task Force on Climate-Related Financial Disclosures) guidelines[23] appear to have set more ambitious goals and rigorous strategies. For example, ITV announced that from 2022, the remuneration of its senior team would be linked to performance against its Climate Action targets, and that its new Revolving Credit Facility would be linked to the delivery of carbon emissions targets, with ITV benefitting from lower interest rates if it hits targets.

Many TMT companies have committed to the Science Based Targets initiative (SBTi; Figure 6), which has established a Net-Zero Standard that provides companies with a clearly defined pathway to reduce their emissions in line with the Paris Agreement goal of limiting global warming to the scientifically established 1.5°C above pre-industrial levels. Targets are considered 'science-based' in that they are in line with what the latest climate science deems necessary to meet 1.5°C.[24]

The TMT sector has a privileged and pivotal position to establish climate change as the catalyst for redefining how we do business. Some businesses have truly embraced the opportunity to lead the way to net zero, including BT, Google and Sky (for detail on these case studies, see Decarbonising Work [2021-024]).

The science is clear and the path forward established as to how the new age of technology has the capacity to enable a zero-carbon future. This is a responsibility that must be enabled with transparency along the path set out by the Paris Agreement; it is one the private sector needs to continue forging with clarity and commitment.

[23] TCFD disclosures became mandatory for 1,300 of the largest UK-registered companies and financial institutions on 6th April 2022. TMT companies affected include: Auto Trader, Future, Auto Trader and ITV.
[24] Science Based Targets initiative, How it works, 2022.

Figure 6: TMT companies committed to the Science Based Targets initiative (SBTi)

Business	Target date	Base year	Scope 1 and 2 reduction target	Scope 3 reduction target
Auto Trader	1.5°C by FY 2030/31	FY2019/20	50% by FY2030/31	46.2% by FY2030/31
BBC	1.5°C by 2031	FY2019/20	46% by FY2030/31	28% by FY2030/31
BT plc	1.5°C by 2030	2016/17	87% in tons of CO_2e per unit of gross value added by 2030	29% by 2030
Dentsu	1.5°C by 2030; 1.5°C by 2040	2019	Reach net-zero greenhouse gas emissions across the value chain by 2040: 46.2% by 2030 90% by 2040	
ITV plc	1.5°C by 2025, 2030	2019	46% by 2030. Increase annual sourcing of renewable electricity from 40% in 2019 to 100% by 2025	28% by 2030
Sky Group	1.5°C by 2030	2018	50% by 2030	
Snap Inc.	1.5°C by 2025	2019	25% by 2025	35% by unit of value added by 2025
The Economist Group	1.5°C by 2025	FY2020	68% by FY2025. Increase annual sourcing of renewable electricity from 0% in FY2020 to 100% by FY2025	23% by FY2025
Vodafone	1.5°C by 2025, 2030	FY2020	95% by FY2030. Increase annual sourcing of renewable electricity from 26% in FY2020 to 100% by FY2025	50% by FY2030
WPP	1.5°C by 2025, 2030	2019	84% by 2025	50% by 2030

Notes: Alibaba, Channel 4, Financial Times, Guardian Media Group, Meta, Rightmove and TalkTalk are all committed to net zero but have not yet submitted their targets to the SBTi (they must do so within 24 months of committing).
[Source: Enders Analysis, SBTi]

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