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SUSTAINABILITY
IN OUR SECTORS



**THE FUTURE OF
SUSTAINABLE
BUSINESS**

NOVEMBER 2021



“Rather than being overwhelmed by the severity of the issues, now is the time to recognise and prepare for the inevitable in order to both understand the risks and be open to the opportunities.”

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“The cost of not making business changes at this crucial time is so high as to be unthinkable. Doing nothing will make business unsustainable.”

We are living through climate change. The time to avert or even slow its onset has passed, and we are left with the task of mitigating, adapting and limiting its acceleration into crisis. The release in August 2021 of the first part of the latest Intergovernmental Panel on Climate Change (IPCC) assessment report, AR6, shone a stark light on the likelihood of global warming exceeding 1.5°C above pre-industrial levels.



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Combining multiple lines of evidence, real-world observation and advanced computer modelling, the report's authors have created the most accurate predictions for climate change to date. To meet the goal of the 2015 Paris Agreement, the entire world needs to achieve net-zero greenhouse gas emissions before 2050. This goes far beyond the commitments already made by national governments.

The cost of not making business changes at this crucial time is so high as to be unthinkable. Doing nothing will make business unsustainable. The positive news is that there is genuine action that can be taken, at every level, and by every organisation, to cut emissions while simultaneously building resilience to allow society to weather the coming storm. And the damage done can be repaired. AR6 confirms that removing CO₂ from the atmosphere is a plausible way of reducing temperatures, and could result in warming dipping back

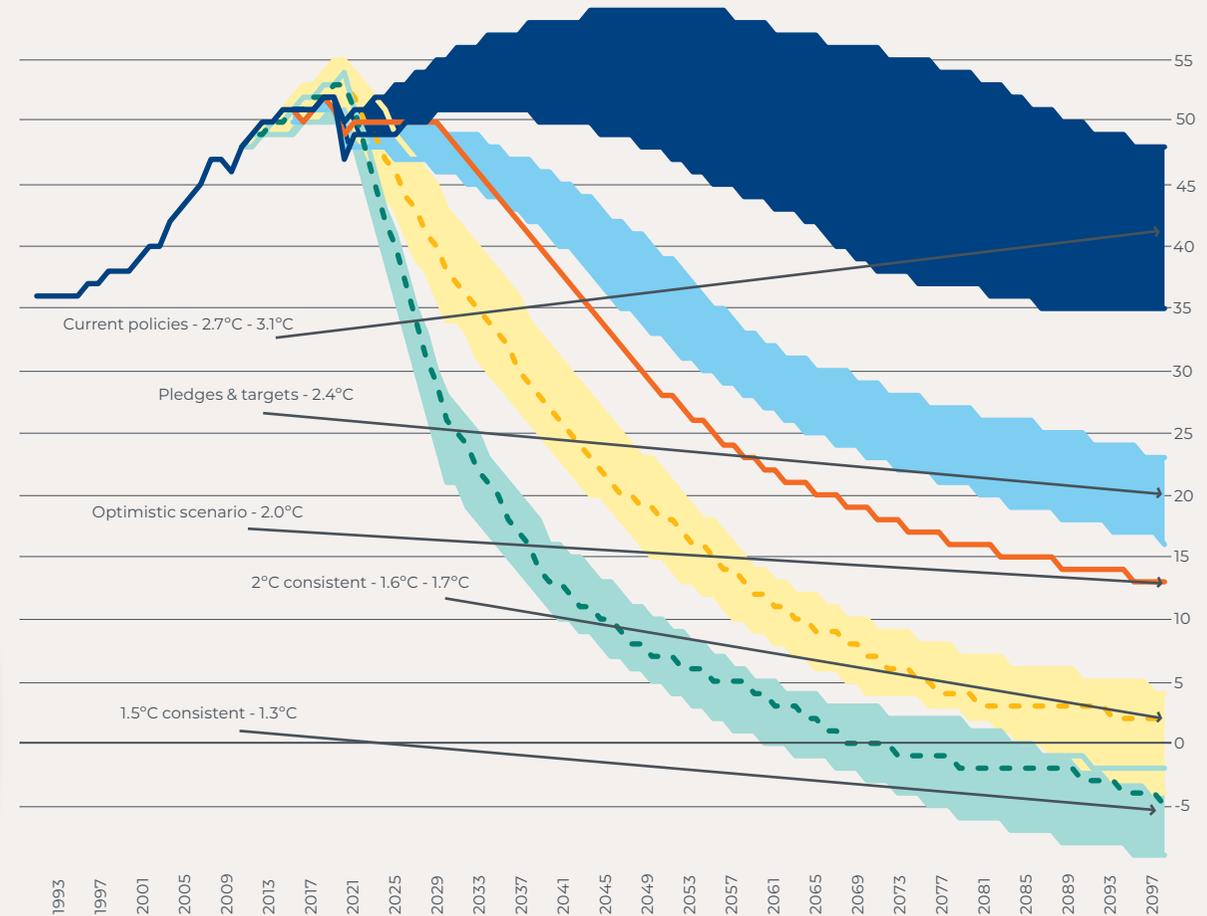
under 1.5°C by the end of the century. Removals also make the concept of net-zero feasible.

Rather than being overwhelmed by the severity of the issues, now is the time to recognise and prepare for the inevitable in order to both understand the risks and be open to the opportunities. Societal, infrastructure and economic developments on the near horizon include mass migration; increasing use of waste products as raw materials; the introduction of new technologies to meet climate challenges; and changes in weather patterns, biodiversity, water availability and therefore land use. These shifts present challenges to both businesses and individuals, but also create scope for everyone to have a significant impact on the way the world rises to meet those challenges.

In this report, we explore the future of sustainable business through the lens of essential considerations facing our

The world is not on track to limit greenhouse gas emissions enough to hold global warming below 2°C

Global GHG emissions in GtCO_{2e} per year, 1990-2100*



*From 2010 onwards data is forecasted

**H denotes High scenario

**M denotes Medium scenario

**L denotes Low scenario

Source: Climate Action Tracker, GlobalData

clients. These include the transition to renewable energy sources; the decarbonisation of the transport sector; climate change finance to fund a sustainable future; building a resilient, fit-for-purpose infrastructure; the increasing burden of climate related regulation; and the growing risks surrounding ESG failures and subsequent litigation. By focusing on how these issues will unfold in the coming decade, we highlight the key developments our clients need to prepare for.

This report's focus on shifts in the business landscape running into 2030 underscores the fact that sustainability is an immediate issue, and companies need to comprehend what is possible and necessary within this timeframe. To respond to the present and coming challenges, we all need to act with authenticity, collaborating to achieve the best results, and taking the broadest perspective on what constitutes success.

Energy Transition

The role of renewable energy

Energy transition – the switch to renewable energy in every sector, including industrial processes, manufacturing, domestic life and transport – is the most powerful means of cutting greenhouse gas emissions available to us.

To achieve it, transition fuels need to be tested and implemented. Sustainably powered vehicles have to come online on roads, rivers and oceans, and in the air. And infrastructure must be built to support the use of renewables and create a steady supply.

The urgency with which this has to happen is made clear in the IPCC's AR6. Limiting human-induced global warming requires rapid methane (CH₄) reductions and a decrease in cumulative CO₂ emissions to the point of net-zero. With global warming set to continue until at least 2050, these deep reductions are the only way to prevent post-industrial surface temperature increases exceeding 2°C.¹

¹ <https://energymonitor.ai/tech/hydrogen/how-green-hydrogen-will-grow-up-into-a-global-market>



“Power is where you make the biggest difference to your emissions profile. But how do we provide a high level of renewable penetration in the grid without affecting stability or having blackouts?”

JO GARLAND, PARTNER, HFW

“There is consensus that an energy transition grounded in renewables and efficient technologies is the only way to give us a fighting chance of limiting global warming by 2050 to 1.5°C,” says Francesco La Camera, International Renewable Energy Agency (IRENA) director-general.²

Yet in 2020, the REN21 Renewables Global Status Report revealed that renewables contributed only 11% towards global final energy demand. With that demand expanding 20% since 2009, more fossil fuels are being burned than ever before.

The global position can perhaps be led by the more advanced transition observed in the UK where renewables share of electricity generation was 41.6% in Q1 2021.³ Renewables have now generated more energy than fossil fuels in four of the last five quarters in the UK.

It is no surprise that the UK is leading the world due to the strong policy support for offshore wind and solar, backed

by a large and liberalised electricity market, an ongoing commitment to decarbonisation, a stable policy regime and a skilled supply chain. Yet, even in the UK, obstacles remain with new offshore wind projects facing a 10 year period from initial concept to commercial operation, and increasing resource constraints in the market (e.g. heavy lift vessel availability and offshore drilling capabilities for larger fixed bottom turbines).

In a report published in May 2021⁴, Renewable UK urges the Government to commit to specific deployment targets for onshore wind, floating wind, renewable hydrogen and marine energy in the run-up to COP26 in Glasgow. The report argues that the UK needs to raise the bar further contending that the Prime Minister’s new target of slashing emissions by 78% by 2035, and reaching net zero emissions by 2050, can only be achieved by setting out clear milestones to be met by 2030.

For example, whilst the Government has set a target of 1GW of floating wind by 2030 – the industry wants to aim higher and double this within that timeframe to reach 2GW, capitalising on the UK’s global lead in this innovative technology. Doing so is critical not only for the development of clean energy in the UK, but also in other countries with deep waters, like Japan, South Africa and Brazil. The more the UK builds, the faster cost reduction will occur. The UK Government recognises that the falling cost of technology, just as it did with fixed offshore wind, results in global development, UK exports and UK jobs grow in turn. Hence, the Government’s Offshore Wind Sector Deal in 2019, the adoption of more aggressive renewables targets in 2020, and the introduction of Free Ports in 2021.

“Energy transition means decarbonising the way we live. That isn’t just about energy companies, it’s about everything, from ships and planes

to our cars, homes and the food we eat,” says climate finance expert Peter Zaman, partner at HFW. “To make societal change at a global level, we have to alter the entire economic metric that has led us to the highly carbonised world we populate today.”

But the road to transition is obstructed by cost versus impact, says Zaman, with IRENA’s World Energy Transitions Outlook calculating an annual investment of \$4.4trn to achieve global energy transition. “We need to be able to put a price on it in a way that’s fit for purpose and doesn’t destroy businesses, economies and livelihoods. We do not yet have the tools to enable that to happen.”

At the current rate of change, the world will only reach the level of renewable usage required by 2030 in 2050 – two decades too late. The next 10 years will prove decisive, in terms of policy, technology and willingness to change. Transition requires not only phasing

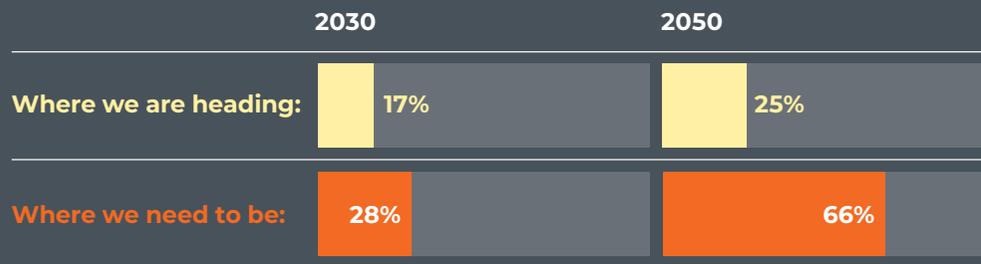
2 <https://www.irena.org/newsroom/pressreleases/2021/Jun/IRENAs-World-Energy-Transitions-Outlook-Re-Writes-Energy-Narrative-for-a-Net-Zero-World>

3 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/997347/Energy_Trends_June_2021.pdf

4 <https://www.renewableuk.com/news/564309/Government-urged-to-set-new-2030-targets-for-renewable-technologies-ahead-of-COP26.html>

A six fold increase is needed in deploying renewables in the world's energy mix

Renewable energy share in global total final energy consumption, %

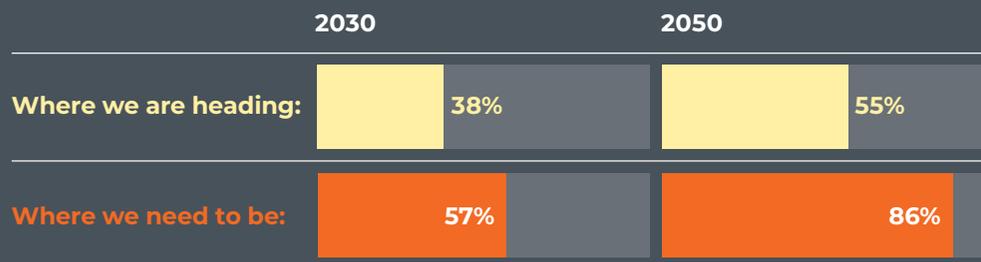


Source: IRENA

Fig 2: At the current rate of change, renewables will only make up 17% of global energy demand by 2030. That figure needs to be 66% by 2050 to make a sufficient impact on carbon emissions.

The world will reach the 2030 required level of renewables in electricity generation by 2050

Renewable energy share in global electricity generation, %



Source: IRENA

Fig 3: At the current rate of progress, energy transition will take until mid-century to reach the levels needed to meet the world's carbon reduction goals.

out of fossil fuels, but market solutions allowing the entire supply chain to shift to renewable energy.

Creating a steady supply

“Power is where you make the biggest difference to your emissions profile,” says Jo Garland, partner and energy transition expert at HFW. “But there’s a question about how we provide a high level of renewable penetration in the grid without affecting stability or having blackouts.”

Approaches to meeting this challenge vary by country. In northern Europe, in the absence of an ability to store electricity on a commercial scale, the use of interconnector cable networks to link grids allows flexibility of supply for renewables, with grids enjoying a surfeit of renewable energy supplying those grids in need. “If there’s a surplus of renewable energy being generated by a Scottish turbine, they flip a switch and send it to Norway,” says Richard Booth, construction and engineering specialist and partner at HFW. “They turn off their hydropower station, store the water in the reservoir and use the carbon neutral wind power. When the wind stops, they flip the switch the other way.”

Storage is another method of maximising renewable energy supply, with ‘big battery’ technology supporting grid-scale storage plants. With 400MW of lithium-ion batteries on site, Moss Landing Power Plant on Monterey Bay, California can power

300,000 homes for four hours. An additional 182.5MW of Tesla megapack batteries is set to boost its capacity. However this technology has its own challenges with the need to safely manage the use of lithium-ion energy storage systems to prevent the risk of thermal runaway fires.

Other territories deploying high-capacity batteries include the UK, where following BEIS move in 2020 to ease and remove planning restrictions⁵ for utility-scale batteries, permitting cells over 50MW in England and arrays over 350MW in Wales, has led to larger ESS projects with the £200m lithium battery site at DP World London Gateway set to expand to 1.3GWh. Lithuania is investing £118m in a 200MW battery park that will allow it to disconnect from the Russian-controlled grid. And in Chile, in 2020 work began on a 112MW project, South America's largest.

Advances in lithium-ion battery chemistry are reducing costs at such sites, as well as expanding capacity and storage life. The National Renewable Energy Laboratory in the US predicts that mid-range costs for big batteries will fall 45% between 2018 and 2030, making them an economically viable grid alternative.

The argument for green hydrogen

The global switch to renewables won't happen overnight, and supply challenges mean continued reliance

on fossil fuels and greater demand for transitional fuels with a lower environmental impact. Hydrogen is a front-runner, because it can be used in existing sectors that have proved difficult to decarbonise so far, such as shipping and heat for heavy industry.

Most hydrogen in the energy network currently comes from natural gas, so a shift will need to be made to green hydrogen. Made from solar-or wind-powered water electrolysis, it offers a realistic option for transporting and storing large volumes of renewable power, particularly from offshore wind platforms, such that the green hydrogen can be stored and used whenever it is needed, providing flexibility to the energy system.

Demand for green hydrogen and derivatives including ammonia is expected to rise ten-fold by 2050, reaching 500m tonnes per year, with up to two-thirds likely to be traded rather than locally produced. With opportunities to establish wind-to-hydrogen and solar-to-hydrogen plants in more geographies than the oil and gas industry, the global green hydrogen market will be more open and diverse than its fossil fuels equivalent.

Europe and Japan are expected to be leading importers of hydrogen, with exporters including Australia, South Africa and Chile. In June 2021, Germany and Australia signed a bilateral green hydrogen production and trade agreement. Australia will supply the

COP26 focus:

Secure global net-zero by mid-century and keep 1.5 degrees within reach

Based on current progress, limiting global warming to 1.5°C of pre-industrial levels is impossible. Meeting the Paris Agreement targets will still see an increase of 3°C by 2100, resulting in extreme weather, species extinction and cataclysmic flooding and fires.

Evasive action has to accelerate. The world needs to halve emissions by 2030. Countries are therefore being asked to upscale emissions reductions targets with the aims of net-zero by mid-century. Delivering this required an accelerated phase-out of coal, greater investment in renewables, curtailing deforestation and switching to EVs.

COP26 will see an update on national commitments, and support guaranteed by developed countries to help the developing world deliver clean energy.

⁵ <https://www.edie.net/news/11/Energy-storage-planning-regulations-eased-in-bid-to-spur-net-zero-transition/>

“Energy transition means decarbonising the way we live. That isn’t just about energy companies, it’s about everything, from ships and planes to our cars, homes and the food we eat”

PETER ZAMAN, PARTNER, HFW

sunshine and land, with engineering expertise coming from Germany. Dedicated funding will be needed to make similar arrangements possible across the globe, probably from the private sector.

Accelerating EV uptake

Transport accounts for around a quarter of global CO2 emissions. So to meet carbon emissions targets, electric vehicles (EVs) need to come online across commercial and domestic transport. By 2030, the International Energy Agency forecasts that there will be 125 million EVs owned worldwide. But their uptake raises concerns over how green EVs really are.

“There is a sustainability issue over the amount of energy required to build EVs, and what you do with the batteries when they reach end of life,” says Booth. “On top of that, they mostly use lithium batteries, and the impact of mining it on the local area is often overlooked. The industry appears very green, but when you scratch the surface, there are question marks.”

To make every car on just the UK’s roads electric by 2050 would require almost double the current annual global cobalt production, plus 75% of lithium and at least 50% of the world’s

copper production. Such demand multiplies the environmental and social impacts of mining, including child labour, pollution, deforestation and water shortages. Recycling and reuse of EV batteries is currently inefficient, uneconomic or impossible.

Technological advancements could meet these challenges. Theoretically, lithium can be generated from seawater, while the Natural History Museum and consultancy Wardwell Armstrong are collaborating in producing lithium carbonate from Cornish and Scottish rocks. Tesla has announced cobalt-free cathodes for its batteries; while Chinese firm BYD, the world’s biggest EV manufacturer, is already using lithium-iron-phosphate batteries.

In recycling, new methods for separating electrode materials are needed, plus more flexible processing, standardisation of batteries between manufacturers, and, most importantly, batteries designed to be recycled.

6 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1011283/UK-Hydrogen-Strategy_web.pdf

Transport

Decarbonisation in shipping and aviation

The transport sector accounts for a significant percentage of global emissions. Consequently, decarbonising every facet of it is a high priority for governments and private sector organisations alike. But while decarbonisation is key for both, the aviation and shipping industries face very different challenges and require unique solutions to reach that goal.

“To achieve genuine decarbonisation by 2050, the shipping sector requires significant financial incentives and investment in realistic and scalable zero emission fuels and fuel flexibility as well as effective and cohesive regulatory intervention which will enforce GHG emission reductions and sanction non-compliance...”

ALESSIO SBRAGA, PARTNER, HFW

Steering shipping to a carbon-free future

While arguably the least environmentally damaging form of commercial transport, shipping is nonetheless the source of 3.1% of global CO2 emissions, making decarbonisation an immediate priority. But the complexities involved require multi-stakeholder commitments.

“In order to achieve genuine decarbonisation by 2050, there first needs to be an acceptance that we need to move away from the use of fossil fuels to non fossil-based solutions,” says Alessio Sbraga, partner and specialist in marine and offshore environmental compliance and regulatory advisory at HFW. “The shipping community needs significant financial incentives and investment in alternative and zero emission fuels and fuel flexibility, together with the necessary infrastructure for those fuels, and redesigning of vessels to house

such fuels as well as effective and cohesive regulatory intervention which will enforce GHG emission reductions and sanction non-compliance.”

Government incentives and investment in R&D and infrastructure will be crucial, as will financial sector backing. The green charter launched to help shipping reduce its carbon footprint sees institutions including Société Générale, Citi, ABN Amro, Danske Bank, ING and DNB partnering with the Global Maritime Forum, University College London, Rocky Mountain Institute and the shipping industry to develop the Poseidon Principles. These provide a methodology for assessing the climate impact of shipping portfolios. The banks are also backing a \$100m loan portfolio to global shipping, with climate considerations driving lending decisions.

The new wave of sustainable vessels

To achieve carbon neutrality, new fleets of zero-emission vessels (ZEVs) need to come online. Short-sea shipping, such as ferries, can be electrified, and is already deployed in Scandinavia, but the size of batteries needed for longer voyages make them impractical.

Various sustainable fuel alternatives are being mooted. Maersk’s carbon neutral cargo vessel, due to come online by 2023, has been accelerated seven years ahead of schedule by customer demand. The blueprint is for a carbon neutral methanol-powered feeder vessel with capacity for 2,000 20-foot containers.

However, bio and synthetic e-methanol are in short supply, and may not represent a sustainable solution. “Any new fuel that relies on biofeedstock, such as bio-methanol, is by definition a dead-end as there is simply not enough sustainable biofeedstock to meet the needs of society,” says T&E’s shipping director Faig Abbasov.¹

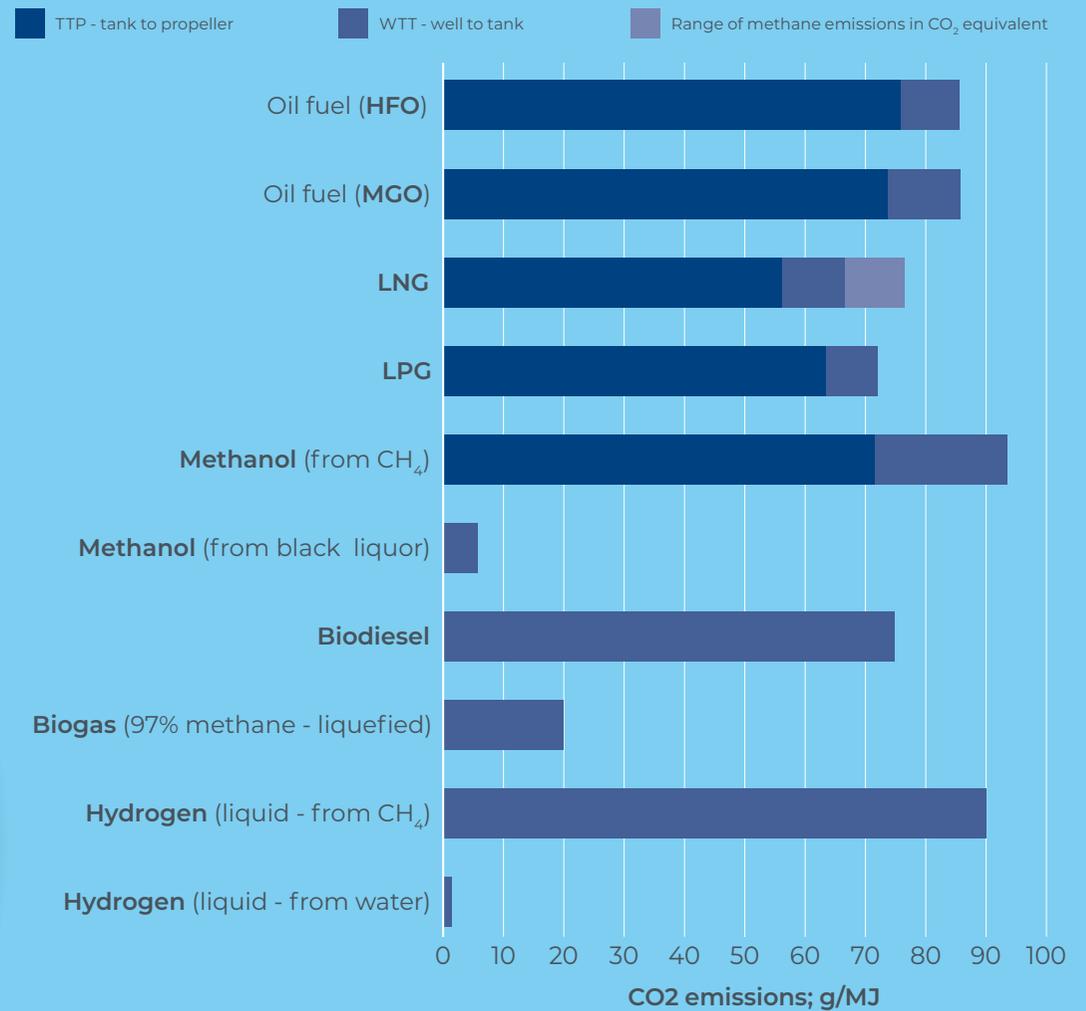
Alternatives to synthetic fossil fuels include green hydrogen (see page 9) and biomass-derived fuels. Biomass fuels can be burned in existing combustion engines, and are being tested as drop-in fuels, but they also suffer from capacity issues. Given competition from other industries, they will likely be limited to a transitional solution.

Ports commit to eco-upgrades

IPCC AR6 states that global mean sea level (GMSL) is virtually certain to continue rising over the 21st century, potentially increasing 1.02m by 2100, and must be factored into adaptation planning. Environmental vulnerability means ports need to upgrade their sustainability response, including warehousing and fuel provision. Research published in Nature Climate Change suggests that GMSL will put 14% of the world’s major maritime ports under threat from coastal flooding and erosion.

¹ <https://www.transportenvironment.org/news/world's-first-'carbon-neutral'-ship-will-rely-dead-end-fuel>

CO2 emissions of alternative fuels in shipping



Source: DNV GL calculations; biodiesel emissions depend on the production method. Graphic uses data from the European Renewable Energy Directive (Council of the European Union, Interinstitutional file: 2016/0382 (COD), Brussels, 21 June 2018)

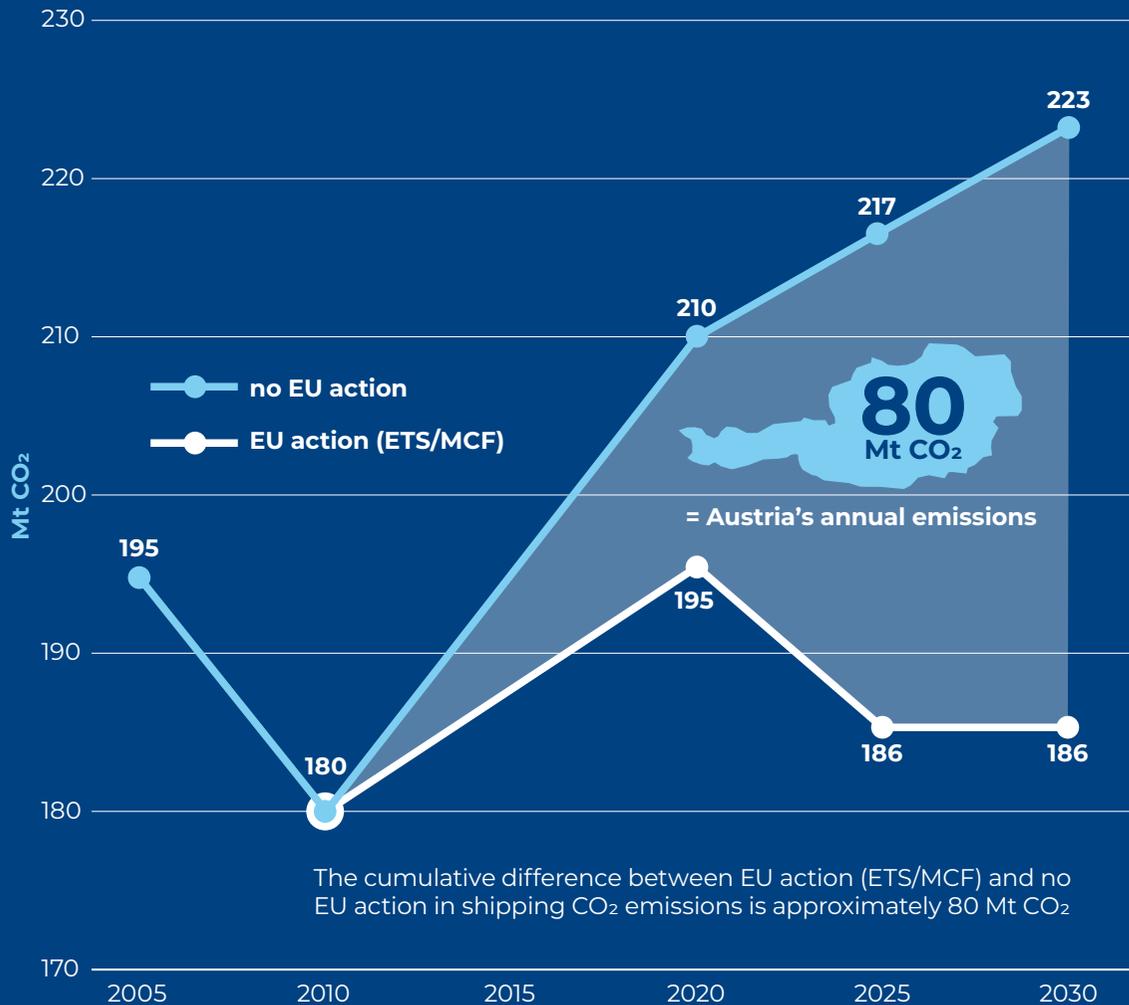
Source: <https://www.dnv.com/expert-story/maritime-impact/How-new-builds-can-comply-with-IMOs-2030-CO2-reduction-targets.html>

Fig 4: The shipping industry is having to consider a range of alternative fuels in order to reduce its emissions profile.

Energy transition will see ports shifting from single-source fossil fuel consumption to multiple energy sources, and producing onsite electricity. In France, for example, where industrial emissions targets require the almost total decarbonisation of maritime transport, there are plans to produce up to 6.5GW of offshore wind power by 2028. These power stations could electrolyse hydrogen from seawater, providing another source of fuel for ports.

In North America, ports are signing up to the Green Marine programme, with all 18 major Canadian ports working to reduce emissions from ships. Halifax, Vancouver and Montreal are allowing vessels to connect to onsite electricity grids rather than burning diesel, and the provision of liquid natural gas (LNG) for refuelling also cuts greenhouse gas emissions. Vancouver's Port 2050 plan also includes reporting on air pollution, water quality and wildlife impacts.

Growth in emissions if shipping in Europe is not regulated



Source: EC, impact assessment 2013

Fig 5: Without regulation, the increase in Europe's shipping emissions will equal the annual greenhouse gas production of the nation of Austria.

Europe's largest port, Rotterdam, is spearheading the World Ports Climate Action Program. The initiative focuses on accelerating development of in-port renewable power-to-ship and zero-emissions solutions, commercially sustainable low-carbon marine fuels, and decarbonising cargo-handling facilities, and increasing supply chain efficiency through digitisation. "As critical hubs in the global maritime transport network, I am convinced that ports can make a significant contribution," said Allard Castelein, Port of Rotterdam CEO. "International port authorities have taken on a leading role in this area, committing to collaborative projects that can further advance the decarbonisation of the maritime transport sector."²

Shipping regulation impacts

One of the major requirements for shipping over the next decade is clarity on how to comply with local, national and international regulation. The International Marine Organization's jurisdiction over reducing carbon in the industry should help create shared standards across the globe. It has set out technical and operational requirements and standards to be applied to ships from 2023, designed to reduce the carbon intensity of vessels and improve energy efficiency.

Meanwhile, the EU has incorporated shipping into its emissions trading system (ETS). "They will introduce a

² <https://www.portofrotterdam.com/en/news-and-press-releases/leading-port-authorities-combine-forces-climate-action-program>

global tax levy, effectively a carbon tax, and operators will be able to trade carbon emissions. That's a completely different way of doing it from the IMO's approach," says Sbraga. "There is a lot of discussion about what the right thing is to do. But I don't think anyone has a magic wand. Instead the shipping community is faced with a multi-tiered regulatory framework which will make it more complicated for the main stakeholders to comply with."

Aviation's route to net-zero via SAF

"Following the publication of the IPCC report in August 2021, there is a critical need to find a long-term fuel solution for both short- and long-haul flights," says Paul Woodley, partner in the Aerospace Team at HFW. With airlines around the world committing to net-zero carbon emissions by 2050, the need for viable sustainable aviation fuel (SAF) is acute.

Boasting comparable chemistry to traditional fossil fuels, SAF offers up to an 80% reduction on carbon emissions. It can be produced from sustainable feedstocks such as cooking oil; animal or plant waste oils; packaging, paper and textiles; or food scraps. Waste wood and fast growing plants or algae can also be used.

A number of airlines have already carried out SAF-only flights, while others are investing in SAF production facilities. Southwest Airlines is

partnering with the US National Renewable Energy Laboratory (NREL) to scale up SAF production from food waste, reducing fossil fuel emissions and cutting methane produced by food rotting in landfill.

SAF producer LanzaJet has received backing from British Airways, Nippon Airways and Shell to construct an ethanol to jet fuel plant in Georgia, USA, due to start operating in 2022. The company aims to have four plants operational by 2024, producing SAF from any source of sustainable ethanol. And New York-based JetBlue Airways has set ESG targets which include switching to 10% blended SAF and converting 50% of ground service vehicles to electric by 2030.

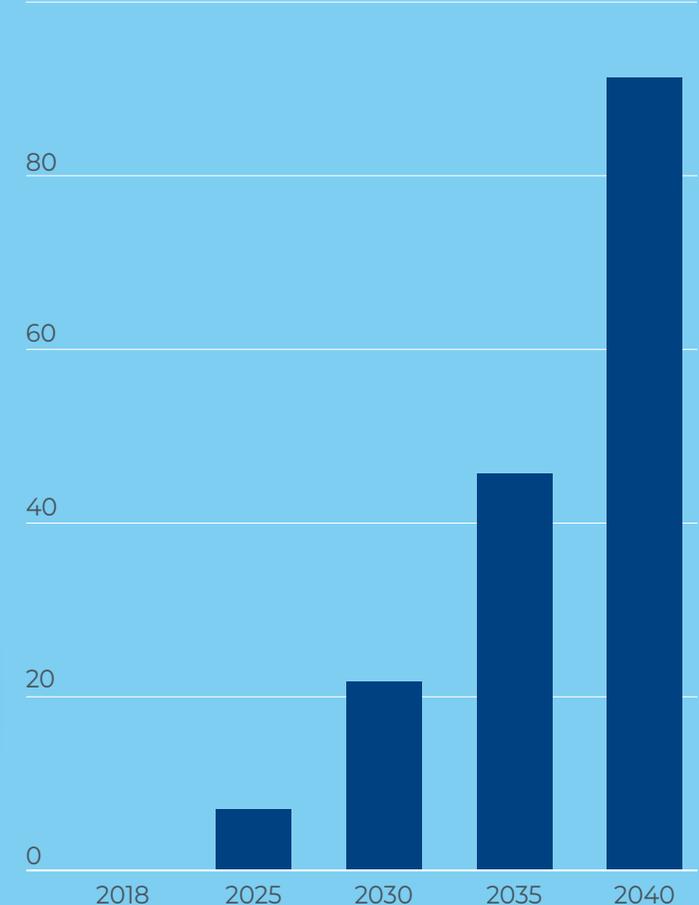
The SAF scale-up scenario

But despite these initiatives, the scale-up challenge is vast. "SAF only represents 4% of the current total consumption of fossil fuels for aviation and is around 65% more expensive than existing jet fuels," says Woodley. "It will be a number of years before SAF becomes a viable option for long-haul flights. Many estimates are well beyond 2050."

In 2019, 96 billion gallons of jet fuel was burned by the world's airlines; in 2020, 60 million gallons of SAF was produced. The commitment to net-zero by 2050 is going to require significant acceleration of existing projects, and opportunities to engage with new ones.

Estimated sustainable fuel needed to offset new carbon emissions from aviation

100 million tons



Note: Assuming that such fuels provide a 60% reduction in greenhouse gas emissions
Source: GlobalData

Fig 6: A 10-fold increase in SAF production is needed between 2025 and 2040 to balance out new aviation emissions.

“It will be a number of years before SAF becomes a viable option for long-haul flights. Many estimates are well beyond 2050.”

PAUL WOODLEY, PARTNER, HFW

“This is an area of great investment, including by way of incentives, and commitment around the world through ICAO and other international organisations, as well as governments, airport authorities, airlines and engine manufacturers and fuel majors, to name but a few,” adds Woodley.

Any scaling up will have the positive benefit of reducing the cost of SAF, currently up to five times higher than traditional jet fuel. IATA predicts production of 1.9 billion gallons annually could be the tipping point to making SAF competitive, but that will require a 30-times increase on current production.

With ranges on electric aircraft limited to 1,000 nautical miles for the foreseeable future, SAF remains the only realistic solution for decarbonising long-haul. Engine manufacturers are therefore focusing on designing engines that can be fuelled 100% by SAF.

At the start of 2021, Rolls-Royce successfully completed ground tests

of unblended SAF, followed by tests on a business jet engine. The tests show that large jets can operate with 100% SAF as a ‘drop-in’ option, setting up the potential for the fuel’s certification. The Pearl 700 engine also offers greater efficiency, and a 12% better thrust to weight ratio than previous models.

Taking the electric avenue

For short-haul flights, electric and hydrogen powered aircraft should prove viable solutions. France has now enacted the Climat et Resilience plan, which will ban the use of fossil fuels on domestic journeys within its national territory. Norway has shown its commitment with a target to operate short-haul all-electric flights within the next 20 years. And EasyJet is aiming to operate 180-seat fully electric aircraft with a range of 500km by 2030.

Spanish carriers Air Nostrum and Volotea are working with Dante Aeronautical to electrify their short- and medium-haul fleets. Following a

submission to the European Recovery Fund, the €42m project plans to have electrically propelled aircraft in commercial operation by 2026.

“Although with our current hydrogen and battery technology, it remains an ambition for the mid-term future, it’s clear from these projects that hydrogen-electric power has the potential to be a long-term solution for short-haul flights,” says Woodley.

Regulating greener aviation

SAF and electric-fuelled aircraft are included in new emissions legislation. In the EU, for example, ReFuelEU will oblige fuel suppliers to blend increasing levels of SAF in jet fuel loaded at EU airports.

“The progress of both hydrogen-electric technology and SAF in aviation brings a range of challenges implemented by international, regional and national regulatory bodies,” says Woodley. “However, the utilisation for SAF is still comparatively low.

IATA’s target to reduce net aviation CO2 emissions by 50% by 2050 will require a huge commitment. This extra commitment will need to come from government – both in legislation and funding – plus fuel suppliers, airlines, engine manufacturers and airports.”

The path to achieving fully sustainable transport solutions will involve a combination of technical and financial innovation, revised regulatory frameworks and a continuous commitment of the industry participants to deliver on what is now being demanded. “This is creating both challenges and opportunities for our clients as they seek to navigate their way through an ever-evolving and multi-tiered regulatory landscape,” says Woodley.

Finance

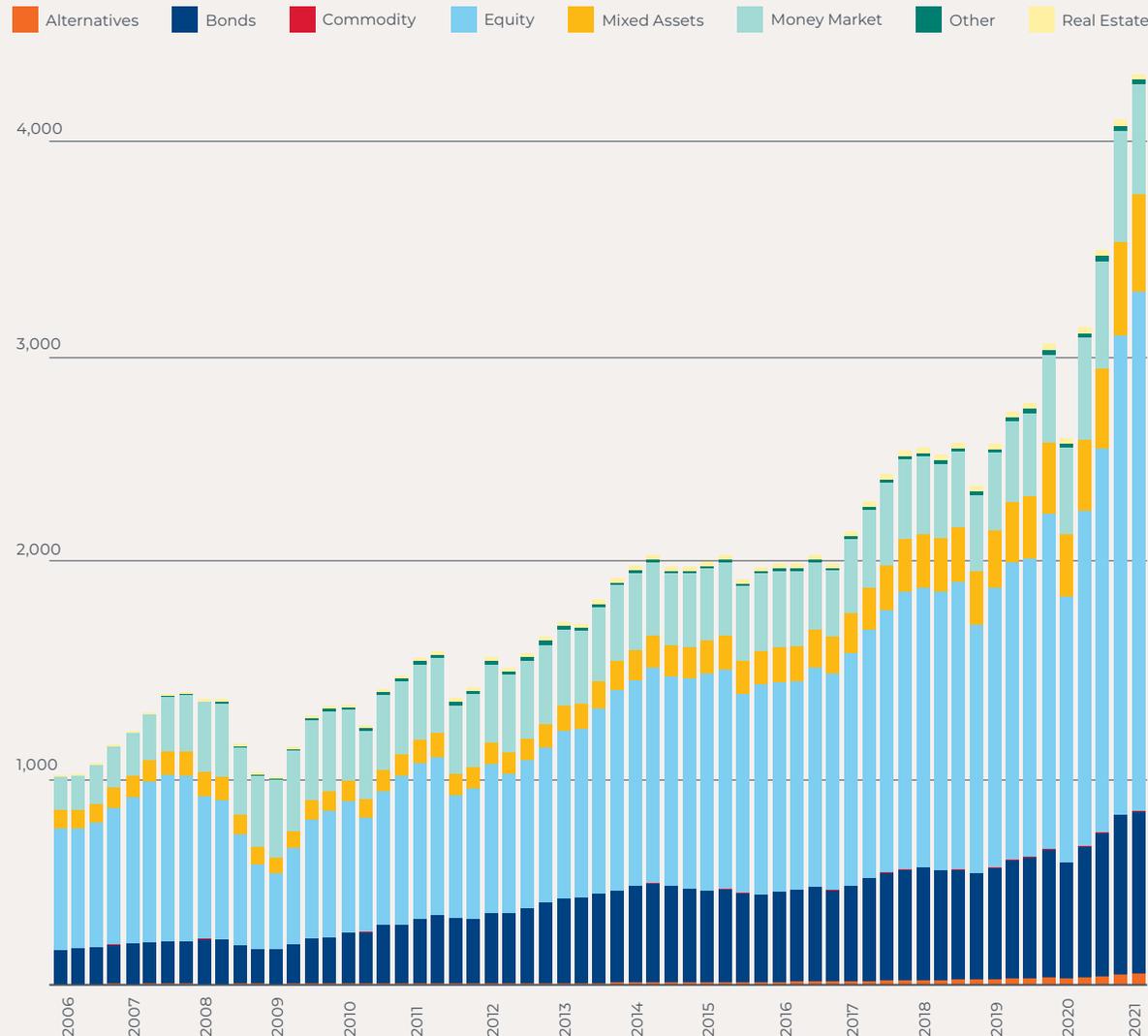
Funding sustainability

The success of the energy transition will lie in our ability to pay for it. To make a significant change in global energy use, the entire economic model that has led to a highly carbonised, disposable world needs to change. A figure has to be put on the environmental price of human behaviours, which can be met by governments, businesses and individuals. This cost counting exercise is fundamental to reversing the climate crisis.

Entirely new financial instruments will have to be created to fund the technologies and infrastructure needed to withstand new climate challenges. Research by KPMG has shown that approximately \$90trn will need to have been invested in the infrastructure sector globally between 2015 and 2030 to achieve the UN's Sustainable Development Goals (SDGs) support the expanding human population.

ESG investment explodes

Global volumes of ESG mutual funds and ETFs by asset class (\$ bil)



Source: Lipper, Eikon

Fig 7: Investment in ESG-focused funds has seen a massive uptick since 2020

Paying for energy transition

Where mitigation finance has previously been employed to build sea defences and tidal barriers, the focus now needs to be on adapting to the inevitable climate changes outlined in IPCC's most recent Assessment Report (AR6). The UN Environment Programme's 2016 Climate Change Adaptation Finance Gap Report estimated that by 2030, the annual cost of adaptation will be \$140bn-\$300bn. In the face of AR6 and the bill for recent extreme weather events, that estimate looks conservative.

The private sector will have to make up the shortfall left by limited government spending capacity already battered by the Covid pandemic. "We need the asset and pension fund managers, who have \$100trn-plus of assets under management, engaged in getting those assets to work towards energy transition," says Peter Zaman, partner at HFW.

Financial opportunities represent the carrot enticing funds and financial institutions to focus on the climate crisis – while stakeholder pressure, regulation and reporting are the stick. But nations are at different stages when it comes to enforcing sustainable practices, and voluntary steps are needed to bridge the gap.

"Where countries have taken on commitments under the Paris Agreement, but are not doing what is required to drive change, voluntary

initiatives are stepping in,” says Zaman. One example is the Task Force on Climate-related Financial Disclosures. Recognising that financial markets need quality data on the risks and opportunities related to climate change, the TCFD is working to improve climate-related financial reporting.

The power of ESG disclosure

Better reporting is key if private finance is to drive energy transition, as fund managers need reliable data on the environmental, social and governance (ESG) pedigrees of potential investments. The shareholder community is rapidly adopting an ESG-centric perspective. Deloitte has forecast 200 new funds with an ESG investment mandate will launch in the US alone between 2020 and 2023, more than doubling the activity of the previous three years, and predicts ESG assets will total almost \$35trn by 2025.

This shift isn't purely altruistic. “In the world of Mammon and human nature, money making and wealth making will always dominate. At the same time, if you can see through that you can see an opportunity to deliver with purpose,” says Paul Clements-Hunt, founder, The Blended Capital Group. “From the beginning we tried to differentiate ESG investing from corporate social responsibility: understand your material risks and you begin to understand new opportunities, whether it's climate ecosystem destruction or any of those things. These risks are

increasingly material. The really smart asset managers get both – they understand systemic risk, they understand converging systemic risk, and they understand the opportunities presented by the new industries.”

Improved long-term returns, brand and reputation, and decreased investment risk are the top motivations for ESG investing, according to BNP Paribas research. In a report by Oxford University's Smith School of Enterprise and the Environment, 88% of the 200 studies examined showed that solid ESG practices result in better operational performance, while 80% found that stock price performance is positively influenced by good sustainability practices.

ESG disclosures are no longer a niche market activity. The Governance & Accountability Institute (G&A) determined that 86% of the companies in the S&P 500 Index published sustainability or corporate responsibility reports in 2018. One challenge for companies and their investors is that there is currently no globally mandated ESG reporting standard, which has led to the creation of voluntary alternatives. “A voluntary standard that requires companies to report their climate associated risks, and disclose it in a common reporting template, can give asset managers a common benchmark against which to measure companies' performance on climate change,” says Zaman.



“Every company needs to understand the science of climate change, what’s required to reduce emissions, and what they need to do to transition their company to net-zero.”

PAUL SIMPSON, CEO, THE CDP

In 2021, 168 investors from 20 countries, representing over \$28trn in global market capitalisation, pushed for greater corporate transparency by backing the Non-Disclosure Campaign (NDC) run by Carbon Disclosure Project (CDP) a non-profit global environmental disclosure platform. “Companies need to mitigate the risks and to seize the opportunities through an evolving strategy,” says Paul Simpson, CEO of the CDP. “Every company needs to understand the science of climate change, what’s required to reduce emissions, and what they need to do to transition their company to be a net-zero company. CDP scoring shows where a company is on that journey.”

These investors have considerable clout in encouraging businesses to disclose data through CDP. The NDC has seen an average 38% increase in investor participation since 2017, with a 56% uplift in 2021 compared to

2020. This momentum is encouraging governments and exchanges to impose mandatory ESG reporting requirements.

Countering emissions through carbon markets

While ESG reporting is an example of the voluntary leading the mandatory, emissions targets and carbon pricing are the reverse. In essence, carbon pricing calculates the public cost of greenhouse gas emissions – health care, damaged crops, extreme weather impacts – and ties that cost to the source of the CO₂, pricing it by the tonne. This puts the burden of paying for the damage done on the polluter. For the system to have a positive environmental outcome, the carbon price must be both significant and reasonable.

Established in 2005, the EU Emissions Trading System (ETS) was the first international carbon trading scheme.

Despite early struggles to achieve a stable carbon price that would drive change, it has become the EU’s main weapon in the struggle to reduce emissions. Working on a cap and trade system, it is designed to cut the most CO₂ with the least economic impact. A cap is set on the total amount of greenhouse gases that can be emitted by an organisation, and reduced over time to drive down total emissions. Within the cap, a limited number of emissions allowances can be traded. Those who fail to surrender enough allowances to cover their emissions are heavily fined.

Carbon pricing is effective in decarbonisation, with OECD research showing that robust carbon prices make low-carbon energy more competitive, reduce the use of high-carbon fuels, and provide certainty for those investing in clean energies. Research published in the Journal

of Environmental Economics and Management estimates that an increase in the effective carbon rate by €10 per tonne of CO₂ leads on average to a 7.3% reduction in emissions. International Carbon Action Partnership (ICAP) figures show that EU ETS permit prices increased by €8.90 per tonne of CO₂ between 2018 and 2019, during which period overall emissions in the EU ETS decreased by 8.9%.

The number of carbon trading schemes around the world is growing, with systems online or in development in Japan, New Zealand, Canada, Switzerland, South Korea and, crucially, the US and China. The World Bank reports that there are 64 carbon pricing initiatives, in the form of either an ETS or carbon tax implemented across the globe, covering 45 national and 35 subnational jurisdictions. In 2021, these initiatives covered 21.5% of global greenhouse gas emissions. If

post-industrial global warming is to be limited, however, carbon pricing needs to expand to encompass all jurisdictions.

The Paris Agreement covers the use of international trading of emissions allowances to help meet reductions targets, and establishes a framework of accounting rules. Bilateral co-operation, such as that between the EU and China are widening the scope of carbon markets. A more complete solution, however, would be a truly global carbon market, where every business is trading on the same platform, ensuring harmonised rules and emissions reduction across the board.

In the meantime, innovation is required to encompass the reality that different countries are playing by different rules in mandating carbon emissions targets. For nations slow to engage with emissions trading, carbon border taxes could serve to push them into

global CO2 reduction. “Carbon border taxes have a role to play,” believes Jo Garland, partner at HFW. “Taxation will be an important mechanism to integrate more countries and get the slow adopters on board. It could also be used as a funding source for other climate initiatives.”

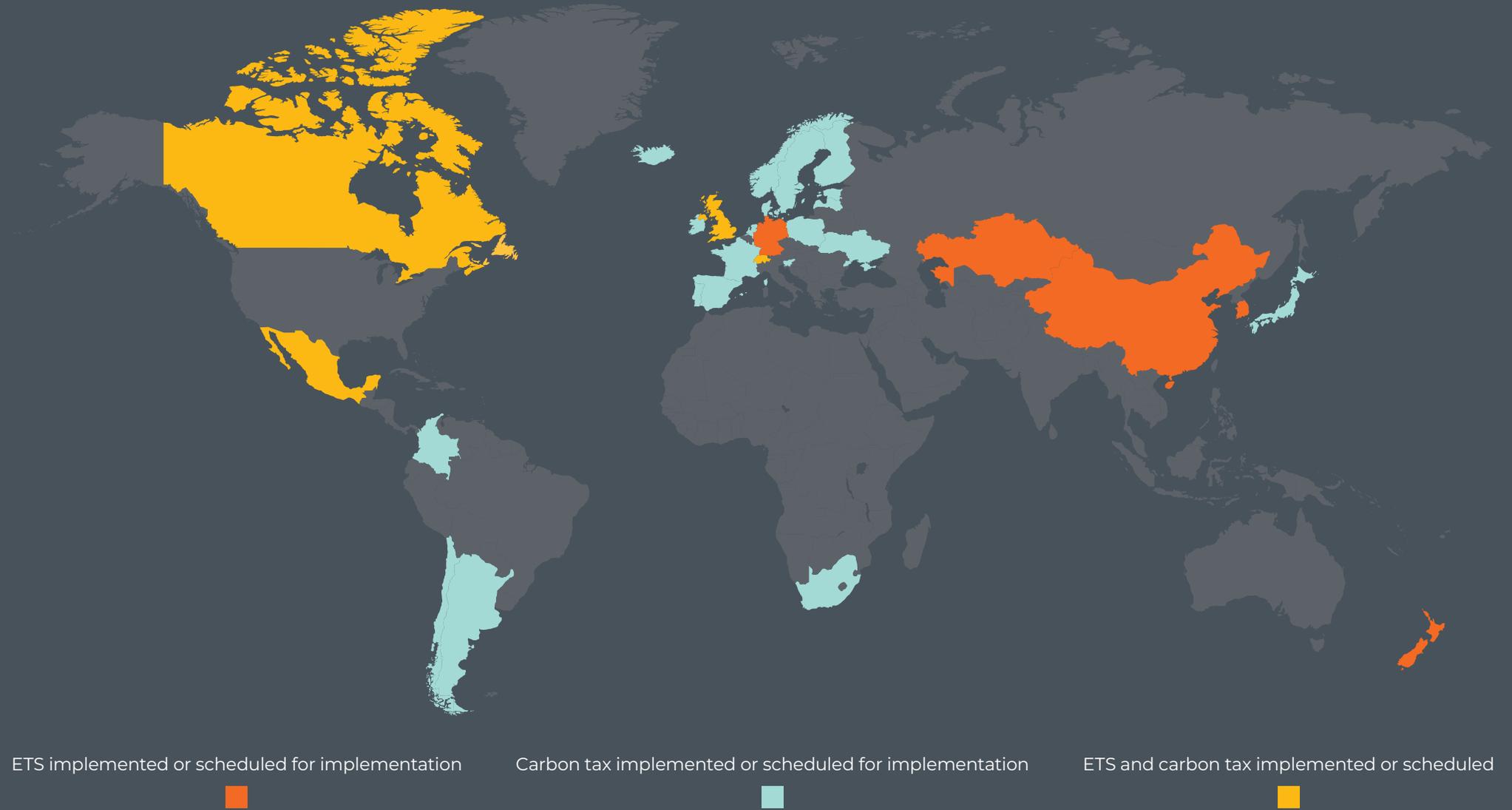
A carbon border adjustment, such as the EU’s proposed CBAM, places a tax on importers whose products have a larger carbon footprint than local counterparts. The levy is equivalent to the CO2 costs a domestic manufacturer would have to pay under government mandated emissions targets. While this works in principle to stop ‘carbon leakage’ – where local manufacturers are put at a competitive disadvantage for employing environmentally friendly production techniques – other territories fear carbon border taxes could spark a trade war.

COP26 focus:

Mobilise finance

The speed of climate change requires adaptation funding to come from both public and private finance, with new approaches being implemented by banks, corporations as well as governments. “Banks and ESG funds will need to be more rigorous and selective in their lending and investment decisions, and improved ESG reporting will make that possible” believes Olivier Bazin, partner at HFW Geneva. At COP26, developed nations will be required to show they are delivering on their promise to raise at least \$100bn in climate finance per year in order to support developing countries get access to the finance they need.

International financial institutions and private capital markets must play their part in releasing the trillions in finance required to achieve global net-zero, putting the net-zero economy at the forefront of business planning and investment and lending strategies. Meanwhile, central banks and regulators will need to model new financial systems that can provide the right incentives, measure and manage climate risk and enable a successful global energy transition.



Source: World Bank

Fig 8: Implemented national carbon pricing initiatives around the world

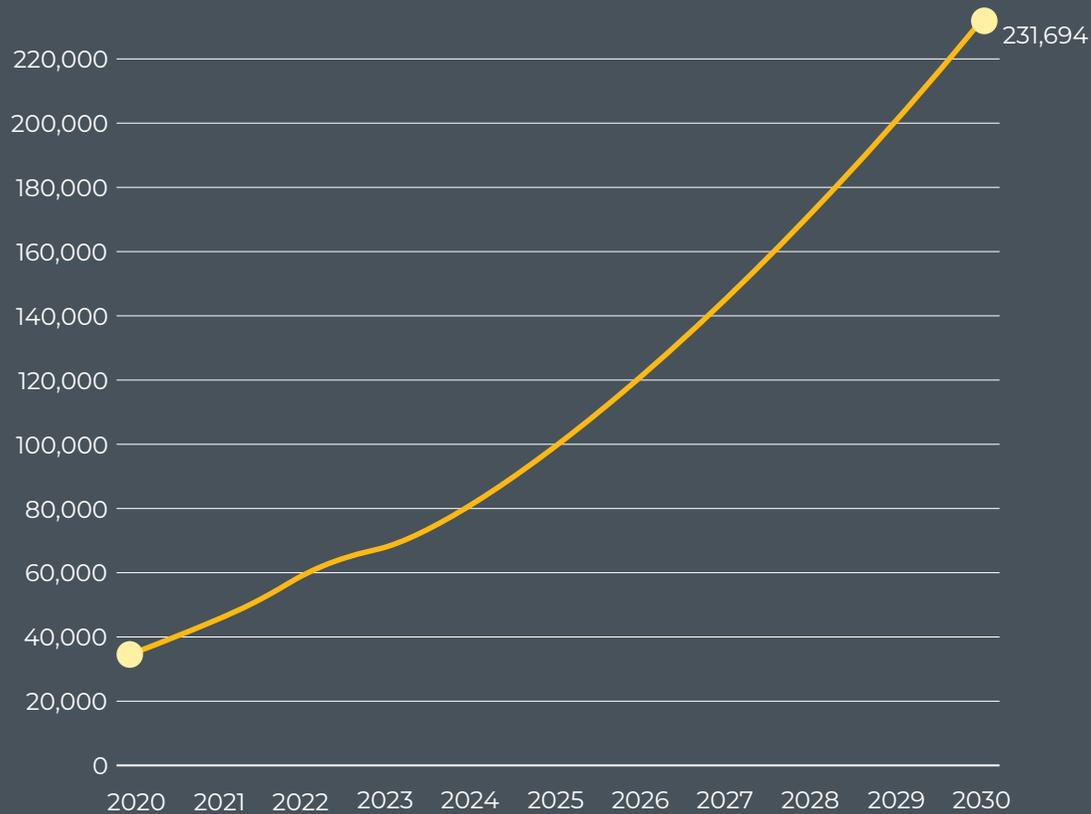
Infrastructure and Construction

Building sustainable infrastructure

Existing infrastructure, be it in the energy, transport, agriculture, built environment or industry sectors, is unlikely to boast the resilience to withstand the environmental changes predicted in IPCC AR6. Without significant adaptation, large, fixed physical assets and underlying infrastructure will be unable to perform at the necessary operational, social, environmental or financial level.

Global offshore wind sector is set to grow with 200GW over next 10 years

Cumulative capacity of global offshore wind projects, MW, 2020-3030



Source: GlobalData

Fig 9: Over the next decade, offshore wind worldwide is set to expand significantly, reflecting its importance as one of the most effective large-scale renewable energy solutions.

Adapting infrastructure for climate change

Adapting infrastructure to climate change, a report by Climate-ADAPT, the EU platform for sharing data and best practice on climate change adaptation, outlines how global infrastructure must be proofed to withstand weather events such as extreme temperatures, ice and snow, flooding, sea level rise, storms, and changes in water availability. Interdependency between infrastructure sectors means damage in one area can create a cascade failure, causing massive disruption. The frequent co-location of energy, ICT, water, and transport networks, for example, could see a single landslide simultaneously interrupt all of these assets.

The Climate-ADAPT paper also outlines the need for enormous infrastructure investment over the coming years, with costs multiplied by the requirement for dedicated climate proofing. This includes retro-fitting existing infrastructure, improving sea defences and flood protection, and interconnecting water supplies. Barriers to climate-resilient infrastructure investment include the need to commit more capital upfront, additional risk premiums due to uncertainty over likely regional climate impacts, and the lack of a consistent formula for valuing natural habitats over man-made structures.

Failure to make these investments will, however, cost far more. Long term profitability and the ability to continue functioning will be the return on any infrastructure investment made now. Infrastructure adaptation requires public and private investment in smart, interconnected energy and transport networks and climate-resilient buildings to ensure that the global economy can continue to function.

Construction focus: Offshore wind farms

The drive towards renewable energy to stem the rise in global temperatures presents a powerful example of the need to adapt existing infrastructure and introduce new technology to cope with changing climate conditions, while minimising environmental impact. It also shines a light on the challenges facing the construction industry in implementing these changes. Within the renewables stable, the offshore wind sector provides a clear illustration of these needs and challenges.

“We are on the cusp of major growth in offshore wind around the globe,” says Richard Booth, partner at HFW. “In the UK, the leading jurisdiction in the world in terms of capacity, there is around 10.5GW of installed wind offshore, but now the push is to reach 40GW by 2030, driven by the government’s commitment to get to net-zero by replacing coal power stations with renewable energy.”

Europe and East Asia are set to rule the offshore wind production in 2030

Top 10 countries by cumulative capacity of offshore wind projects, MW, 2030

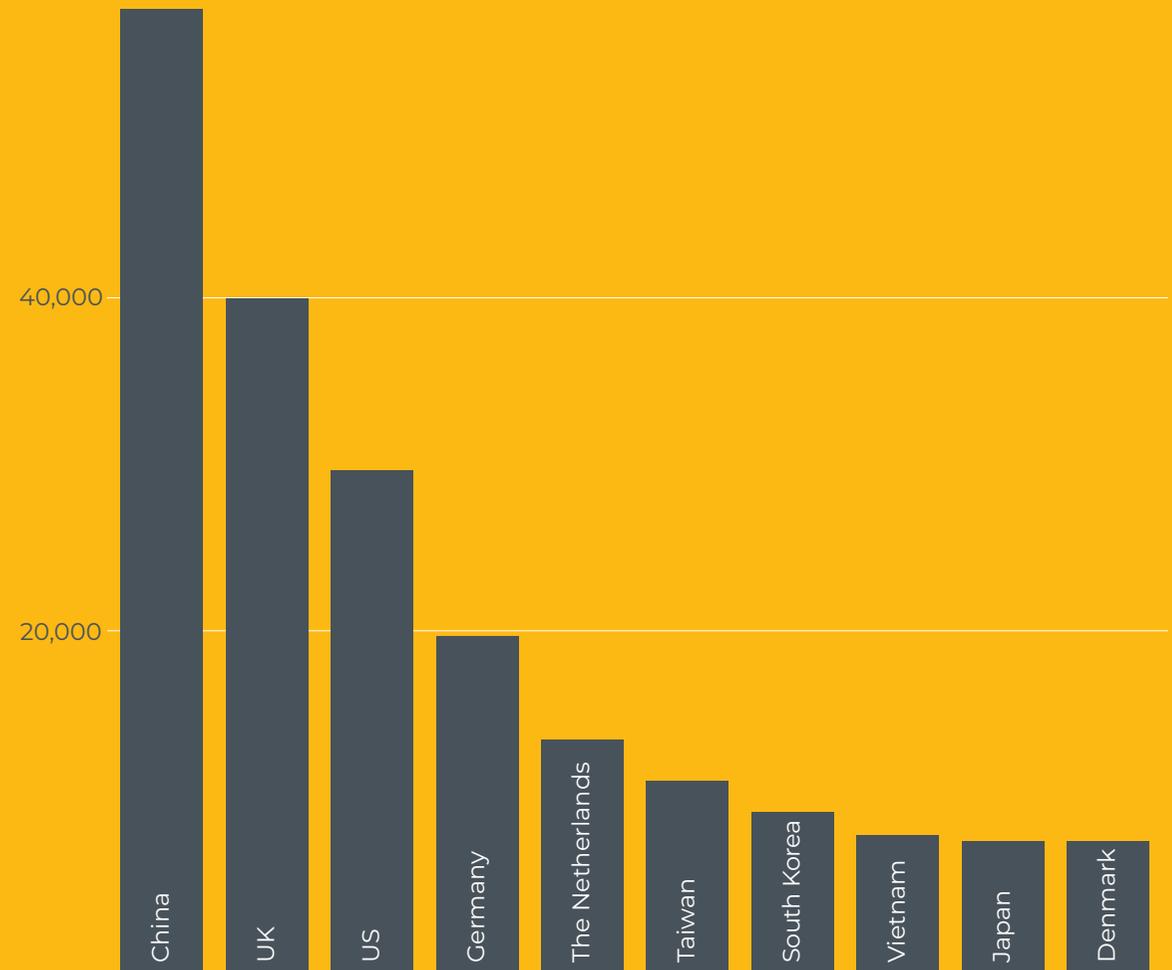


Fig 10: Regions such as Europe and East Asia, where there is suitable topography for offshore wind turbines, will see substantial expansion in offshore wind capacity.

The UK's Office for National Statistics reports that in 2020, the UK generated 75.620GWh of electricity from onshore and offshore wind, accounting for 24% of the country's total electricity generation, 13% of which was from offshore installations.

The UK's undersea topography makes offshore wind an effective renewable resource, a fact recognised by the government in its energy and infrastructure planning. "Over the last 10 years, the UK government's invested heavily in offshore wind, now supported by the recent creation of 'free ports' in Hull and Teesside, where turbine blade manufacturers are getting tax incentives to build big facilities," says Booth. "And it's not just to supply the UK market – they're fabricating blades for use in non-UK projects, so it's an investment in the global offshore wind market."

As well as tax incentives, ports need new infrastructure to service the renewables industry. A £25.7m investment by the Hull Green Port Growth Programme, supported by the government's £3.2bn Regional Growth Fund, aims to capitalise on opportunities in offshore wind, as well as biofuels, waste-to-energy and wave and tidal power generation.

Global trends mirror the UK's drive towards offshore wind, with only a minor slowdown in projects in 2020 due to COVID-19. The International

Energy Agency (IEA) predicts that global wind additions will reach 68GW in 2021, 7.3GW of which will be offshore. Despite the phasing out of incentives in China and the US, faster expansion in Europe and large capacity installations becoming operational in France, Korea, Japan, Taiwan and Vietnam could see offshore additions reach 100GW in 2023-25. By 2025, offshore is expected to represent 20% of total wind additions, thanks to deployment across new markets, among them Brazil, Mexico, India, Sri Lanka and Australia.

"Offshore wind is truly going global," says Ben Backwell, CEO at the Global Wind Energy Council (GWEC).¹ "Over the coming decade we will see emerging offshore markets like Japan, Korea and Vietnam move to full deployment, and see the first offshore turbines installed in a number of new countries in Asia, Latin America and Africa. 1GW of offshore wind power avoids 3.5 megatonnes of CO₂ – making it the most effective available large-scale technology to avoid carbon emissions and displace fossil fuels in many geographies."

Expansion will come at a price, however, requiring the implementation of policy support schemes, greater social acceptance of offshore installations, overcoming of permit challenges, reduction of regulatory uncertainties, investment in national grids, and increased expansion of corporate PPAs.

The world's offshore wind challenge

As the world comes on board with the benefits of offshore wind, projects are facing resource shortages. "The industry is already reaching maximum capacity in terms of the resource availability to deliver existing projects," says Booth. "There are only so many heavy lift vessels in the world with sufficient capacity cranes to lift the foundations, which are not only getting heavier, but also larger. Then there are a limited number of installation teams to put up the turbines. And with the UK, France, Germany, Denmark, Taiwan and China all looking to push offshore wind, there is increasing demand." This demand will grow further once the US, currently focused on onshore wind and solar, fixes its sights on commercial scale offshore renewables.

"As multiple territories start building offshore wind out, developers will accelerate the project timeline to a point where it becomes challenging for the contractor to deliver it, with design and fabrication delays impacting the ability to install projects in the correct weather windows, and when allocated vessels are available," warns Booth.

With limited resource available, missing one slot can have serious knock-on effects for the entire project. As well as the financial and schedule impacts, such delays often result in disputes.

"The result is different developers negotiating to reallocate vessels from project to project on a global scale to solve the problems of resource constraints," adds Booth.

As new technologies come online, so new challenges are presented. The appetite for floating platforms, for example, is keen, with GWEC predicting that at least 6.2GW of floating wind capacity will be added globally by 2030. In the US, it is being mooted as a solution for the Pacific coast, where the undersea landscape precludes fixed platforms. Other key markets include Scotland, Norway, Portugal, Spain, France and Japan. As commercialisation increases and costs reduce, territories such as South Africa, the Philippines and many island states may come on board.

But floating wind remains, with the exception of some commercial projects in Australia, a largely untried concept. "New technology in offshore wind normally equals problems and delays and costs," warns Booth. "You need to work out how to install cable so it doesn't suffer damage, and understand how anchors on the seabed are going to hold."

What goes up must come down

While offshore wind installations are spreading across the globe, the resources to erect and maintain them

¹ <https://gwec.net/gwec-offshore-wind-will-surge-to-over-234-gw-by-2030-led-by-asia-pacific/>

“The industry is already reaching maximum capacity in terms of the resource availability to deliver existing projects.”

RICHARD BOOTH, PARTNER, HFW

are being stretched even further by decommissioning programmes. Older, less efficient wind farms are coming to the end of their useful life, which, combined with the acceleration of decommissioning activities for oil and gas installations, is putting demands on the same pool of vessels, port infrastructure, engineers and technicians employed in raising new turbines. Once decommissioned and dismantled, the components of the defunct turbines also need to be disposed of in a sustainable way.

Research by the Offshore Renewable Energy (ORE) Catapult and Circular Economy for the Wind Sector (CEWS) suggests that total decommissioning is the least cost-effective approach for end-of-life wind farms, and should be the final resort. The process of removing turbines, foundations and cables is expensive, and leaves the site with no future revenue generation potential.

In an ideal world, the most economic approach would be partial repowering, installing larger turbines at an old site, potentially extending the site's useful life by 25 years. However, repowering requires the existence of foundations strong enough to take the weight of the larger turbines and cables that still have a service life and are capable of handling the larger turbines – stresses that need to be factored in as each new site is constructed.

COP26 focus:

Adapt to protect communities and natural habitats

The climate is already changing and it will continue to do so even as we reduce emissions, with devastating effects. IPCC AR6 has shown that limiting global warming to 1.5°C above pre-industrial levels is extremely ambitious, and the world has to be prepared for the consequences of not doing so. Action is needed to instil resilience and protect the most vulnerable.

To achieve this, nations need to work together to enable and encourage countries affected by climate change to protect and restore ecosystems, build defences, put warning systems in place, and make infrastructure and agriculture more robust to avoid loss of homes, livelihoods and lives. All countries are being encouraged to produce an 'Adaption Communication' summarising their plans to adapt to the changing climate, and share best practice.

Regulation

Shouldering the burden of sustainability regulation

As action on climate change becomes ever more urgent, no organisation will be allowed to ignore their responsibility to do business in a sustainable way. In the next decade, companies will see the sustainability regulatory burden increase, putting environmental, social and governance (ESG) issues at the forefront of corporate decision-making.

Companies need to be aware that monitoring ESG regulation and ensuring compliance is an on-going requirement, and procedures that are adequate today may not be sufficient tomorrow. Those that fail to comply with regulatory requirements won't just suffer from potential fines and legal action, but also the loss of customers, talent, investors – and their social contract to operate.



“Sustainability is an issue which has far greater boardroom importance than before. As a result, both the burden, and the opportunities, are likely to increase over the next decade.”

DANIEL MARTIN, PARTNER, HFW

ESG compliance: risks and opportunities

Businesses already face concerted pressure from regulators, investors, customers and employees to operate in a manner which emphasises the importance of sustainability, and the requirement to comply with applicable regulations. “If companies fail to meet the expectations of their stakeholders, their ability to operate will be threatened,” says Mark Maurice-Jones, general counsel Nestle UK&I, and Lawyers for Net Zero champion. “Society is increasingly demanding that companies take a long term, ethical and sustainable approach to how they run their businesses. Those companies that are unable to meet those demands are likely to be punished through fines, law suits, regulatory exposure, reputational impact and operating costs. On the other hand, companies that demonstrate a long-

term, sustainable commitment in how they conduct business are likely to see improved market penetration.”

In many cases, businesses can derive a competitive advantage from being leaders in this space, points out Daniel Martin, regulatory and compliance specialist and partner at HFW. “It’s an issue which has far greater boardroom importance than before. As a result, both the burden, and the opportunities, are likely to increase over the next decade.”

Preparing to meet the challenges of greater regulation will require a farsighted understanding of the coming changes and their impact on business practices. “When it comes to climate change, companies need to plan for the long term and not just look for short term gains,” believes Maurice-Jones. “Lawyers are well positioned to make sure this happens through their expertise in identifying and dealing with risk, and in seeing trends

in the evolution of legislation – such as regulations around greenwashing – which can impact the business.”

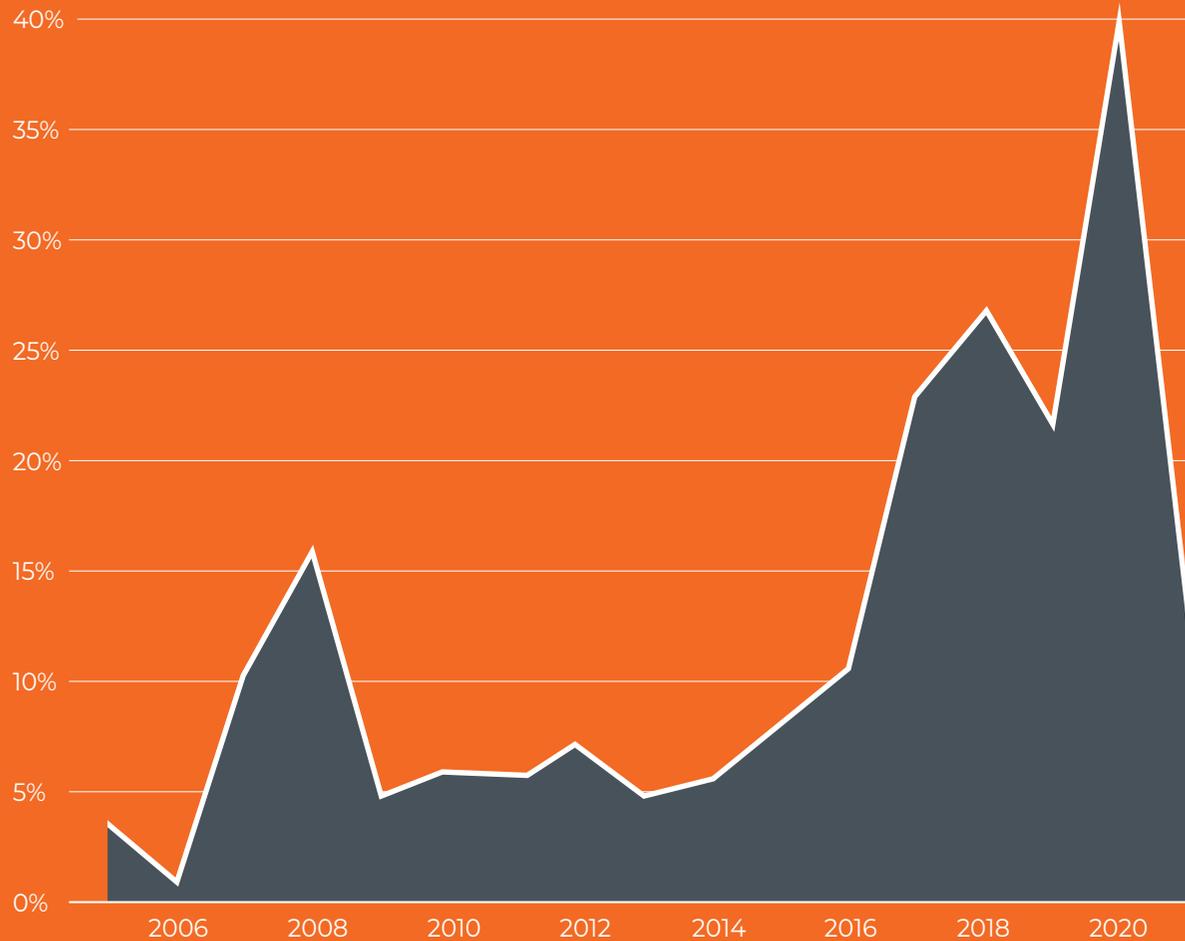
Organisations should take a three-pronged approach, believes Martin. “Firstly, they need to understand the legal landscape – what regulations are in place, what regulations are coming, and what requirements they impose. Secondly, they need to understand their business – where does it operate, what are the challenges, where are its activities impacted by the regulations. For global organisations that means what is happening in each location – it is no longer possible for managers in Global HQ to argue that they had no oversight or control over distant branches. Thirdly, they need to listen to their stakeholders – namely investors, customers and employees – and the regulators, to understand the threats and the opportunities arising from new regulation.”

In a world where the regulations are constantly evolving and the risks are constantly changing, the only way to operate risk-free is to not operate at all. But while it is impossible for any organisation to entirely insulate itself from regulatory risk, action can still be taken now to mitigate any negative impact of incoming regulation over the coming decade. “Businesses need to manage regulatory risk. That means knowing the business, knowing the challenges and pressures it faces, but also demonstrating that regulatory compliance is something which is championed at the highest level within the business, and empowering employees to call out any non-compliant behaviours or other practices, without fear of reprisal,” says Martin.

Driving compliance also has to extend beyond the business, with the onus on organisations to ensure regulatory adherence within the supply chain.

The number of strategic climate litigation cases has been increasing

Proportion of strategic litigation recorded in total number of cases (%)



Strategic cases are cases that aim to bring about some broader societal shift.

Source: Joana Setzer and Catherine Higham, the Grantham Institute

Fig 11: Climate-related litigation cases that aim to change the way corporations and society as a whole operate in relation to the environment.

Counterparty due diligence is therefore increasingly important, whether from the perspective of financial crime, such as money-laundering or sanctions, or from a governance and sustainability perspective, including anti-bribery and modern slavery.

“Making businesses responsible for the decisions they take when selecting suppliers and other counterparties is, of course, very attractive to regulators, who may find enforcement easier, and the threat of enforcement and negative publicity more compelling,” suggests Martin. “But increasingly we also see stakeholders requiring businesses to take sustainability and other compliance issues into account when making decisions about supply chains.”

Incoming climate legislation in the UK

The UK’s incoming environmental regulation represents a useful blueprint for all businesses looking to stay ahead on climate compliance. Legislation and guidance includes:

- **The Environment Bill:** This landmark bill will make provision about targets, plans and policies for improving the natural environment; for statements and reports about environmental protection; about waste and resource efficiency; about air quality; for the recall of products that fail to meet environmental standards; for conservation covenants; about the regulation of chemicals.

- **Sustainability Disclosure Requirements:** The new, integrated Sustainability Disclosure Requirements will bring together and streamline existing climate reporting requirements and ensure both consumers and investors have the data to make informed investment decisions and drive positive environmental impact.
- **Regulation (EU) 2019/2088:** The Sustainability Disclosure Requirements build on measures at EU level, including Regulation (EU) 2019/2088 on sustainability-related disclosures in the financial services sector. This applied from 10 March 2021 and lays down harmonised rules for financial market participants and financial advisers on transparency with regard to the integration of sustainability risks and the consideration of adverse sustainability impacts in their processes, and the provision of sustainability-related information with respect to financial products.

The future of sustainability regulation

The key marker of whether future climate and ESG regulation will become more stringent is how effective existing legislation is at changing behaviours and ensuring the necessary targets are met. “At the end of the day, regulation is just a means to an end, and if the outcome is mere box ticking, or is widely seen as such, or if the measures do not have the

desired effect, then governments and other regulators will need to consider what is needed to make them more effective,” warns Martin.

Based on recent patterns in other spheres, including anti-corruption, modern slavery and sanctions, HFW anticipates that future regulation may involve:

- **Greater focus on enforcement of those regulations which have been promulgated.** For example, the imposition of multi-million dollar fines and settlements have forced all companies to take trade sanctions seriously, and to err on the side of caution, rather than trying to find the point of minimal compliance;
- **A shift from voluntary reporting to mandatory reporting.** Attempts to bolster the UK’s Modern Slavery Act by imposing minimum levels of transparency, and also more public reporting, show how this might work.
- **More stringent requirements.** As we have seen in the context of trade sanctions, if the initial phase of restrictions does not achieve its objective, there may be pressure to impose a more onerous second phase.

Key focus: ESG litigation

As regulation tightens, there will be a directly proportional increase in the amount of ESG-related litigation brought against businesses and governments. Cases of global litigation

“We are seeing increasing diversity in the nature of the cases being brought, especially in connection with climate change. This is expected to affect not only oil and gas companies, but a broad range of commercial actors. By proactively engaging with ESG issues, businesses can work to both reduce these legal risks while also taking advantage of ESG-related opportunities.”

**STEPHANIE MORTON,
ASSOCIATE, HFW**

for neglecting to take adequate action against climate risks have doubled over the past three years, and the trend is set to continue.

The majority of these cases had a positive impact on climate policy. It can therefore be assumed that growing levels of climate litigation by activists and advocacy groups against those not obeying stricter legislation will be a powerful tool in keeping governments and companies engaged in tackling climate change.

In cases against governments, litigation frequently hinges on arguments involving human rights and the threat to the health of populations. Violations include breaching 'climate rights', or failing to implement adequate climate change commitments. Activist groups and popular movements are increasing the pressure, with 2019 seeing an escalation in the use of litigation by climate movements. The shifts in society catalysed by COVID-19 could empower further citizen advocacy.

Lawsuits against large fossil fuel companies – the carbon majors – are also gathering pace. The ground breaking Royal Dutch Shell case, in which climate campaigners forced the oil giant to cut its carbon emissions,

sets a precedent for companies to have a legal duty to take action to meet the goals of the Paris Climate Agreement. Going forward, greenwashing is likely to be at the heart of much litigation, centred on inaccurate or deceptive corporate communications around climate change activities. And the carbon majors are not the only targets. Litigation activity will filter down to the smaller oil and gas companies, and with businesses in every industry keen to advertise their ESG pedigrees, such litigation could hit all sectors. Jo Delaney, partner at HFW says "Government bodies are increasingly being required to consider climate change risks when exercising statutory duties such as protecting the environment and approving mining and resource projects in Australia. Litigation is likely to shift and spotlight the role of commercial entities to protect against climate change and meet net-zero targets."

COP26 focus:

Work together to deliver

It will only be possible to rise to the challenges presented by climate change if all nations work together. At COP26, the focus will be on finalising the Paris Rulebook, which will lay out the changes needed to implement the Paris Agreement. Ambition must then turn into action, accelerating collaboration between governments, businesses and civil society to deliver on climate goals faster.

The Rulebook cannot be simply a catalogue of ideals. It must include practical solutions to create fit-for-purpose carbon markets and outline a robust system of carbon credits that make net-zero workable. It is time for a universal, transparent system that holds all countries to account in sticking to their climate commitments.

Conclusion

It is clear from the issues covered in this report – sustainable finance, energy transition, infrastructure requirements, transport challenges and incoming legislation – that the world is already in a transitional phase on the road to greater sustainability. The question remains, however: how are we as organisations and individuals going to respond?

With even greater change lying ahead, businesses need to decide now how they are going to rise to the climate challenge. Debates on the best way to progress are ongoing, alongside the acceptance that certain shifts are inevitable, and it will be up to each and every organisation to map out a successful, workable route to a viable future.

You do not have to go it alone, however. While everything we understand about the way business works is set to change, HFW is here to help our

clients manage that shift. Will it be disconcerting? Will it be hard? Will decisions be questioned? Undoubtedly: because we are facing an existential crisis as a planet and as a society. But together, through collaboration, expert advice and best practice, we will forge our way to a sustainable future.

We encourage our clients to view this report as a call to action: sit up and take notice of the changes that are coming, be prepared, seek advice, plot a course. Along the way, you can expect continual support from HFW, through the regular release of incisive sustainability content, as well as access to our extensive network of experts around the globe. In the meantime, we invite you to share your views on the content of this report, and the immediate future of sustainability with us. Please contact Giles Kavanagh at giles.kavanagh@hfw.com.



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