Sustainable Markets Initiative

2022 Impact Report

Contents

Executive Summary

Terra Carta and SMI's Mission

In response to the increasing environmental, social, and economic impacts of climate change and biodiversity loss, His Majesty King Charles III, in his former role as His Royal Highness The Prince of Wales, launched the Sustainable Markets Initiative (SMI) in 2020. The SMI is guided by the mandate set out in the Terra Carta, which includes ten principles, and a call to action for the private sector to put Nature, People, and Planet at the heart of global value creation.

The achievements of the SMI in 2022 in progressing the mission of the Terra Carta demonstrate the impact that the collaborative efforts of the private sector, and effective public-private partnership working, can have on accelerating the transition to a sustainable future. In order to drive progress and measure tangible change and impact for 2023 and beyond, the SMI recognises the importance of agreeing upon a common set of metrics and measuring and delivering change against these. Alongside this, the improved governance processes developed within the SMI throughout 2022 will serve to support the delivery of Task Force activities, enabling the SMI to have a more significant impact on the sustainability of the private sector.

Mission

Build a coordinated global effort to enable the private sector to accelerate the transition to a sustainable future.

Vision

A sustainable future for Nature, People and Planet.

Industry and Country Engagement

- 19 Task Forces
- 180+ global CEOs
- 25+ Task Force projects completed
- 6 international events attended
- 10+ projects across a range of countries
- 3 Country Councils

2022 Events

- Spring SMI CEO Summit (London, UK)
- Commonwealth Heads of Government Meeting (CHOGM) (Kigali, Rwanda)
- NY Climate Week (New York, USA)
- Autumn SMI CEO Summit (New York, USA)
- Terra Carta Action Forum at COP27 (Sharm el-Sheikh, Egypt)
- COP15 (Montreal, Canada)

The SMI's Impact in 2022

Article 1
Create Sustainable Industries

Calling upon the private sector to reimagine and create entirely new sustainable industries, products, services, and supply chains while in parallel helping transition existing systems.

How has the SMI made an impact on Article 1 in 2022?

- The SMI Agribusiness Task Force produced a report highlighting barriers and necessary evolutions of regenerative agriculture.
- The SMI Insurance Task Force developed the Sustainable Supply Chain Pledge calling upon insurers to help the businesses they insure to delve into their supply chains and reach net-zero targets.
- The SMI held a panel at COP27 focusing on sustainable buildings and the need to decarbonise the global building stock, which contributes nearly 40% of all global greenhouse gas emissions.

Article 2
Default Sustainable

Calling upon the private sector to embed sustainability in business models, analysis, decisions, and actions, making sustainability a key and default consideration within business operations.

How has the SMI made an impact on Article 2 in 2022?

- The SMI Health Systems Task Force launched a white paper outlining practical recommendations and scalable actions to decarbonise supply chains, clinical research, and patient care pathways.
- The SMI Insurance Task Force developed the Disaster Resilience Framework, which aims to help central authorities proactively manage the impacts of climate change disasters and mitigation.
- The S30, an SMI Alliance of over 30 global Chief Sustainability Officers, have developed leading work on executive remuneration.

Article 3
The Power of Consumers

Highlighting the power of individuals in driving the transition to sustainable markets and calling upon businesses to engage with consumers and equip them with the information on sustainability impacts needed to make well-informed purchasing decisions.

How has the SMI made an impact on Article 3 in 2022?

- The SMI Energy Transition Task Force released a report detailing how businesses can place customers at the heart of the Energy Transition.
- The SMI Fashion Task Force is leading the rollout of Digital ID technology to inform customers of the sustainability credentials of their purchases and drive circularity at scale.
- The SMI hosted a panel at COP27 on practical opportunities for organisations in various stages of their decarbonisation journeys and considering the perspective of the consumer.

Article 4
Accelerate & Align Industry Roadmaps

Highlighting the need for industries to agree on publicly available common metrics, aligned to industry-wide, globally agreed targets to maximise engagement from businesses and to increase transparency.

How has the SMI made an impact on Article 4 in 2022?

- The SMI Aviation Task Force played a key role in convening the aviation industry adopting a 2050 net-zero carbon goal.
- The SMI Private Equity Task Force developed an approach to selecting the most relevant Environmental, Social and Governance (ESG) metrics to support investing and building sustainable portfolio companies in the private equity context.
- At the Terra Carta Action Forum at COP27, the SMI hosted a panel on the importance of continued financial services engagement with hard-to-abate sectors to support their decarbonisation efforts.

Article 5
Game Changers and Barriers

Calling upon the private sector to identify, showcase and invest in emerging game-changing technologies to accelerate tangible progress and address barriers from policies to infrastructure and investment.

How has the SMI made an impact on Article 5 in 2022?

- The Terra Carta Design Lab saw AMPHIBIO produce a 100% recyclable and chemical-free outdoor performance textile, while ZELP designed a wearable device for cattle to neutralise methane emissions.
- The SMI Sustainable Batteries Task Force is developing a digital twin of a battery with critical information on battery chemistry, manufacturing history, provenance, and ESG performance across approximately 30 parameters.
- The SMI Sustainable Buildings Task Force developed a white paper to deliver recommendations for accelerating action to decarbonise the built environment.
- The SMI hosted a panel at COP27 focusing on the effectiveness of the latest carbon capture technologies and exploring how they could be an essential weapon in the fight for the planet.

Article 6
Sustainable Investing at Scale

Calling upon the private sector to provide better access to capital to enable a green transition, through significant investment in sustainable projects and by pivoting away from activities not promoting a low-carbon future.

How has the SMI made an impact on Article 6 in 2022?

- During 2022, the SMI Natural Capital Investment Alliance (NCIA) mobilised over $1.1 billion of investments into Natural Capital and is raising a further $6.2 billion.
- The SMI collaborated with The World Business Council for Sustainable Development to drive growth in the demand for, and supply of, hydrogen.
- The SMI Asset Manager and Asset Owner Task Force has codified a set of findings and recommendations to accelerate the flow of capital towards viable transition finance structures.

Article 7
Nature, the True Engine of Our Economy

Transforming the land sector towards more sustainable practices and building conservation and Nature-based solutions into businesses' asset bases and supply chains while avoiding the pitfalls of land degradation.

How has the SMI made an impact on Article 7 in 2022?

- Recognising there would be no society without the planet's natural resources, the SMI Agribusiness Task Force published a white paper on scaling regenerative farming.
- The SMI Private Equity Task Force produced a report illustrating through case studies how biodiversity can be both value-accretive and risk-reducing when factored into a business plan and investment cycle.
- Representatives from SMI businesses took part in a range of events and panels at COP15, speaking on the importance of driving innovation and low-carbon solutions, and the integration of biodiversity.

Article 8
Create Market Incentives

Stressing the role regulation, policies, and financial incentives can have in creating a wide-ranging impact across many industries and calling upon the private sector to support the reorientation of economic subsidies, financial incentives, and regulations to encourage more sustainable business practices.

How has the SMI made an impact on Article 8 in 2022?

- The SMI Health Systems Task Force published recommendations to demonstrate concrete actions that can be taken to reduce the carbon footprint of health care supply chains and ultimately improve public health and societal outcomes.
- The NCIA identified high-impact areas of focus for COP15 policymakers, including the need to remodel subsidies towards more sustainable and biodiversity-friendly practices.

Article 9
Adopt Common Metrics and Standards

Calling upon the private sector to support efforts towards the alignment of sustainability-related standards and the development and implementation of unified metrics to improve transparency and drive further action.

How has the SMI made an impact on Article 9 in 2022?

- The Global Farm Metric developed a harmonised framework for measuring farm-level sustainability, allowing for the integration of data in enabling sustainable value chains.
- The SMI Energy Transition Task Force published a framework to help investors, finance providers and insurers identify transitioning businesses and track progress towards net zero.
- The SMI Private Equity Task Force produced a voluntary framework to value carbon at portfolio companies and move towards a more consistent approach across the sector.

Article 10
Catalyse Science, Technology, and Innovation

Calling upon leaders to support the development and implementation of new technologies and innovations for tackling climate change and other key environmental issues.

How has the SMI made an impact on Article 10 in 2022?

- The SMI Health Systems Task Force published a paper discussing how digital solutions can be used to reduce emissions in clinical trials.
- The SMI Hydrogen Task Force released a framework for the transport and storage of hydrogen as a renewable energy source.
- At the Terra Carta Action Forum at COP27, the SMI hosted a panel focusing on sustainable fuel value chains and creating low-carbon fuels.

Section 1

Introduction to the Terra Carta and SMI

FOREWORD

Brian Moynihan

Chair and CEO, Bank of America and Co-Chair, Sustainable Markets Initiative

Since its launch in 2020, the Sustainable Markets Initiative (SMI) has helped drive efforts in support of a just transition toward a sustainable future. The SMI's vision and mission demonstrate His Majesty King Charles III's longstanding commitment to **Nature, People, and Planet**. I am honoured to have been asked to co-chair this initiative with him, and the SMI has made significant progress.

The SMI brings together private sector leaders and teams from companies of all sizes and from across different industries around the globe – all working to drive the transition to a more sustainable economy and business activities.

With representatives from around the world, the SMI's 200 active CEO members and over 500 Terra Carta Supporters are finding new approaches to climate change, driving clean technologies to market, scaling innovation, and addressing common metrics and transparency.

2022 was a significant year for the SMI. We continued to grow, with nearly 20 Task Forces created and 20 unique collaborative white papers shared. At the same time, we are building a foundation for the future framing of the organisation. The SMI is well-positioned to deliver more progress in 2023.

The SMI's Terra Carta provides a roadmap to 2030 for businesses to move towards sustainable markets; one that is harnessing the transformative impact, innovation, and resources of the private sector. The SMI's activities, aligned to its Terra Carta, complement the aims of the United Nations Sustainable Development Goals, the Paris Climate Accord and the evolving ambitions of the United Nations Convention on Biological Diversity.

Through the Terra Carta, the SMI is addressing some of the biggest challenges we face as a society today and helping us advance toward more sustainable economies through the power of the private sector, with civil society and country engagement.

As we reflect on the work in 2022 from the SMI and its Task Forces and Alliances, we know there is much more to be done. The 10 Articles of the Terra Carta provide a roadmap for SMI CEOs, Alliances, and supporters to continue to partner, engage, and enable the transformation toward sustainable markets and economies. We share a goal driving and accelerating a just transition for future generations.

Introduction

The impacts of climate change are occurring at an increasing pace with the time for remedial action rapidly narrowing.[i] With just 1.1-degrees of warming, widespread disruption is being experienced in every region in the world.[ii] As global temperatures rise, natural resources are being threatened, with compounding factors such as biodiversity loss, air pollution, water shortages, deforestation, grasslands degradation and ocean acidification increasing. Resource scarcity drives supply chain shortages, increases socioeconomic instability, and affects peoples' livelihoods, with displacement causing further instability and disruption.

History of the Terra Carta

Launched by The former Prince of Wales at The World Economic Forum 2020 Annual Meeting in Davos, the Sustainable Markets Initiative was created to build a coordinated global effort to enable the private sector to accelerate the transition to a sustainable future. The Sustainable Markets Initiative is the implementation body that facilitates the delivery of the Terra Carta mandate.

Deriving its name from the historic Magna Carta, which inspired a belief in the fundamental rights and liberties of people over 800 years ago, the Terra Carta aims to reunite Nature, People and Planet. The Terra Carta provides a roadmap for acceleration towards an ambitious and sustainable future; one that will harness the power of Nature combined with the transformative power, innovation, and resources of the private sector.

To read the Terra Carta Mandate, click here

Climate-related risks top the World Economic Forum's top 10 risks in terms of likelihood and impact[iii]

World Economic Forum Global Risks Report 2020

Top 10 risks in terms of likelihood	Top 10 risks in terms of impact
○ Extreme weather	◆ Infectious diseases
○ Climate action failure	○ Climate action failure
○ Human environmental damage	◇ Weapons of mass destruction
◆ Infectious diseases	○ Biodiversity loss
○ Biodiversity loss	○ Natural resourses crises
● Digital power concentration	○ Human environmental damage
● Digital inequality	◆ Livelihood crises
◇ Interstate relations fracture	○ Extreme weather
● Cybersecurity failure	⊘ Debt crises
◆ Livelihood crises	● IT infrastructure breakdown

Categories

⊘ Economic ○ Environmental ◇ Geopolitical ◆ Societal ● Technological

> **"The 'Terra Carta' offers the basis of a recovery plan that puts Nature, People and Planet at the heart of global value creation – one that will harness the precious, irreplaceable power of Nature combined with the transformative innovation and resources of the private sector."**
>
> - **His Majesty King Charles III,** in his former role as His Royal Highness The Prince of Wales

SMI Mission and Vision

Mission	Vision
Build a coordinated global effort to enable the private sector to accelerate the transition to a sustainable future.	A sustainable future for Nature, People, and the Planet.

The 10 Articles of the Terra Carta

The SMI has three aims, structured around the delivery of the 10 Terra Carta Articles. These are to support a dramatic shift in corporate strategies and operations, a reformed global financial system and to help develop an enabling environment that attracts investment and incentivises action.

Article 1

Create Sustainable Industries

Reimagine and create entirely new sustainable industries, products, services, and supply chains while in parallel helping transition existing systems to a more sustainable trajectory.

Article 2

Default Sustainable

Embed sustainability in business models, analysis, decisions, and actions and develop the disciple for sustainable markets and industries.

Article 3

The Power of Consumers

Communicate better with consumers about the sustainability of the goods, services and investments that are offered.

Article 4

Accelerate and Align Industry Roadmaps

Main economic sectors need to outline publicly accessible roadmaps that identify the steps to net zero and plans for the protection and restoration of Natural Capital and biodiversity.

Article 5

Game Changes and Barriers

Identify, showcase, and invest in game-changing solutions and identify policy, regulation, infrastructure, investment, and environment barriers to progress.

Article 6

Sustainable Investing at Scale

Showcase high-potential investments and reimagined mandates, financial analysis, structuring and models of return to unlock access to investment.

Article 7

Nature, the True Engine of Our Economy

Transform the land sector towards more sustainable practices and build conservation and Nature-based solutions into asset base and supply chains.

Article 8

Create Market Incentives

Adapt incentive structures and re-orient economic subsidies, financial incentives, and regulations to level the playing filed.

Article 9

Adopt Common Metrics and Standards

Develop a single global standard, including unified metrics, for measuring sustainability outcomes to inform non-financial Environmental, ESG reporting and mandatory disclosure.

Article 10

Catalyse Science, Technology, and Innovation

Invest in Science, Technology, Engineering, & Mathematics (STEM), innovation, and Research & Development (R&D) at scale with a focus on sustainable solutions, alternatives, and industries.

How the SMI has made progress on the Terra Carta throughout 2022

To drive forward action, the SMI currently has an active network of over 180 global CEOs helping to lead their industries into a more ambitious, accelerated, and sustainable trajectory. The SMI global CEOs actively participate in 19 SMI industry Task Forces organised across ten transition coalitions spanning multiple industries and three Country Councils in China, Greece, and India.

The SMI has convened 85 industry events since January 2020. Throughout 2022, industry leaders have met regularly to drive forward bold and imaginative actions, which will collectively accelerate the transition to a sustainable future. Each Task Force set a range of annual priorities and unique programmes of work to deliver against the mandate of the Terra Carta, and accelerate global progress towards a more sustainable future.

In addition to Task Forces and Country Councils, more than 500 CEO-level supporters along with the 56 countries of the Commonwealth, the cities of the C40, and the United Kingdom's Core Cities have pledged their support of the Terra Carta mandate.

Agribusiness Roundtable at Goals House during New York Climate Week

SMI Task Forces

Agribusiness

Aviation

Asset Manager and Asset Owner

Blended Finance

Carbon Capture, Use and Storage (CCUS)

Energy Transition

Fashion

Financial Services

Global Farm Metric

Health Systems

Hydrogen

Insurance

Measurement and Transparency

Natural Capital Investment Alliance (NCIA)

Private Equity

Resilient Water Accelerator

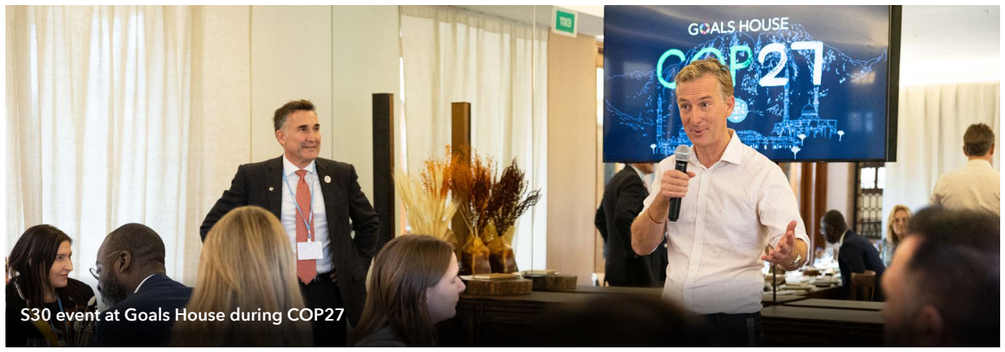
Sustainable Buildings

Sustainable Hospitality and Tourism

Waste

To further explore the activities of all the Task Forces, click here

The SMI Sustainability 30 (S30) group comprises Chief Sustainability Officers (CSOs) from some of the world's most influential companies and is aiming to accelerate business action on sustainability. Launched in collaboration with EY and freuds, the S30 has over 40 founding members representing companies with a total market capitalisation of US$6.7 trillion, revenue in excess of $2.3 trillion and more than 5 million employees. S30 members have been drawn from the most influential businesses in the world covering a wide range of sectors, including consumer and industrial products, energy, financial services, life sciences and technology and met regularly during 2022, with key areas of focus including biodiversity and Global Sustainable Remuneration Principles.



S30 event at Goals House during COP27

SMI Governance

The achievements of the SMI in 2022 in progressing the mission of the Terra Carta, demonstrate the impact that the collaborative efforts of the private sector, and effective public-private partnership working, can have on accelerating the transition to a sustainable future. Throughout 2022, the SMI has developed processes and structure to track and communicate its impact on the delivery of the 10 Articles of the Terra Carta. In order to further drive progress, and measure tangible change and impact for 2023 and beyond, the SMI recognises the importance of agreeing upon a common set of metrics and measuring and delivering change against these. Combined with common metrics and standards, the improved governance processes will serve to support the delivery of Task Force activities, enabling the SMI to have a more significant impact on the delivery of the Terra Carta mandate in 2023 and beyond.

In 2023, the SMI plans to set up a Reporting Oversight Committee, which will provide expert advice on the SMI's impact tracking and reporting processes, and ensure the information obtained in this process can be used to deliver maximum impact for Nature, People and Planet.

25+

Task Force projects completed in 2022

180+

global CEOs supporting the work of SMI Task Forces.

500+

companies pledged their support as Terra Carta Supporters.

> **"Under His Majesty's leadership, the most powerful private sector alliance in living memory has been convened and put to work."**
>
> **- Matthew Freud,**
> Chairman, The Freuds Group

Country Engagement

Another important focus of the SMI is to help create an enabling environment that results in scaling and acceleration of private sector investment to enable countries to transition to a sustainable future. The SMI engages with governments and other key stakeholders, predominantly in emerging markets, to understand their sustainable development priorities and identify projects that require private capital and expert support to achieve investment-readiness. This activity is informed by the work on scaling private sector investment undertaken in collaboration with EY, Deloitte, KPMG and PwC in 2021.

The SMI helps projects to secure investment in a number of ways. For projects that are considered investment-ready, the SMI provides Terra Carta X-Change, a publicly available web-based platform hosted on the SMI website which highlights projects looking for investment.[iv] The SMI is also well-positioned to connect projects to potential investors who are focused on particular sectors and regions.

For projects that are not quite ready for investment, the SMI offers several options to help improve their position. One option is the provision of an online Project Development Tool to aid planning.[v] Another is access to technical expertise from among the SMI Task Forces, and in development is the establishment of a virtual Project Development Unit, which will provide dedicated advisory support to assist projects. In November 2022, the SMI established the Opportunities Advisory Committee; a group of experts in investment and international development, to provide clear guidance on what actions projects need to take to become investment-ready.

Throughout 2022, the SMI has received a steady flow of diverse projects, ranging from renewable energy and sustainable livelihood generation to Natural Capital and reforestation funds. SMI businesses are also lending long-term support to projects, for example, one company is supporting the development phase of a sizeable Amazonian reforestation ecosystems services project which could potentially reforest over 5 million hectares of rainforest and generate much-needed economic opportunity. Another business has formed a strategic advisory role to enable the creation of a renewable energy park in the Caribbean. As of December 2022, the aggregate potential opportunity in the project pipeline exceeded US$8 billion; an important step forward in the SMI's journey to help scale billions to trillions in sustainable investment.

Innovation: the Terra Carta Design Lab

Inspired by the Terra Carta, the Terra Carta Design Lab aims to highlight the urgent need to focus on the creative collaboration between art, science, design, and engineering to produce credible and sustainable solutions to the climate crisis. This initiative invited some of the world's most talented design students to design high-impact, low-cost solutions for Nature, People and Planet.

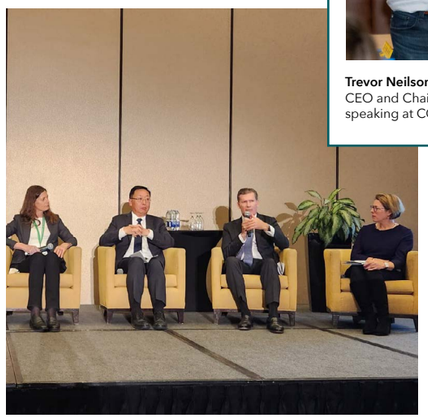
To mark International Design Day on 27 April 2022, the SMI and the Royal College of Art (RCA) announced the winners of the first Terra Carta Design Lab. Out of 125 original submissions, four teams of RCA students and alumni were chosen as the winners of the inaugural Terra Carta Design Lab.

> **"Small ideas can have a big impact if they are supported with the right design, science, and engineering, and that is the key idea behind today's Terra Carta Design Lab."**
>
> **- His Majesty King Charles III,** in his former role as His Royal Highness The Prince of Wales

Cross-collaboration workshop at Terra Carta Action Forum at COP27

Events

COP15
December – Montreal, Canada



Trevor Neilson, Co-Founder, CEO and Chairman, WasteFuel speaking at COP15

CEO Summit and NY Climate Week
September - New York, USA

CEO Summit at Bank of America office in New York

Matthew Freud, Chairman, Freuds Group, speaking at the CEO Summit

Dame Alison Rose, CEO, NatWest, speaking at CEO Summit at Bank of America office in New York

CEO Summit
May - London, UK

HM King Charles III, in his former role as HRH The Prince of Wales, speaking with guests at CEO Summit

John Kerry, U.S. Special Presidential Envoy for Climate, speaking at CEO Summit at St James's Palace

Terra Carta House, Commonwealth Heads of Government Meeting (CHOGM)
June - Kigali, Rwanda

High Commissioners Roundtable at Terra Carta House, CHOGM

Terra Carta Action Forum, COP27
November - Sharm-el-Sheikh, Egypt

Sir Pascal Soriot, CEO, AstraZeneca and SMI Health Systems Task Force Champion at Terra Carta Action Forum at COP27

Baroness Patricia Scotland, speaking at the Terra Carta Action Forum Commonwealth Breakfast during COP27

Section 2

The Terra Carta: Global Picture and SMI Impact for 2022

ARTICLE 1

Create Sustainable Industries

Introduction

Under the objective of 'Reimagining the Future', **Article 1 - Create Sustainable Industries** provides a direct challenge to industries to rethink their business models, create new business rules, and reinvent supply chains to ensure a just and sustainable transition. This encompasses a transition towards a net-zero future and a climate-neutral economy taking communities into consideration in every decision.[i]

Creating sustainable industries will require business leaders to execute major changes by 2030, including the creation of innovative business models, the reinvention of supply chains and the adoption of circular economies.

There is increasing demand for sustainable industries

There are environmental, social, and economic imperatives to create sustainable industries. Whether looking at climate refugees' population displacements, or the diseases associated with high pollution rates, the examples of environmental impacts of climate change are countless, and whilst the world's population reaches record levels, natural resources remain finite. Scarcity of raw materials causes undue pressures on global resources, such as water. A 2021 UN status report for the Sustainable Development Goal 6 – Water, found that a staggering 2.3 billion people live in water-stressed countries.[ii] In addition to that, undernourishment is affecting 821 million people and food insecurity is projected to increase with future climate change[iii], posing significant risks to livelihoods and life itself on Earth. The economic impact is also significant: without a shift from the current business practices, US$14.5 trillion of capital could be lost from the US economy alone over the next 50 years due to climate change.[iv] This would cause significant threats to the stability of global markets and damage supplies of critical goods, such as food and healthcare. To avoid the worst of these impacts, industries and businesses must drive ambitious change by transforming their business models.

At the heart of the SMI's mission is the ambition to realise a low-carbon future and meet the Paris Agreement target, curbing global temperature rise to 1.5-degrees above pre-industrial levels. To reach this goal, the world needs to decarbonise by a staggering rate of 15.2% each year. Globally, both public and private mechanisms are falling short of achieving this and, as such, this rate has gradually increased over the past years. In 2019, the global rate of decarbonisation was only 2.4%, and in 2021, this fell to just 0.2%, its lowest level for two decades.[v] In simple terms, Greenhouse Gas (GHG) emissions must halve by 2030 and drop to net zero by 2050, and global carbon intensity must fall by 77% by 2030 to keep a 1.5-degrees future in sight.[vi]

US$14.5tn
of capital could be lost from the US economy alone over the next 50 years due to climate change.

Global Picture

Businesses are beginning to consider sustainability within their operations

The last decade has seen a dramatic shift in private sector engagement with sustainability. Most major businesses have some form of sustainability embedded into their business models and many produce in-depth reports outlining their sustainability progress. It was found that 92% of S&P 500 businesses and 70% of Russell 1000 businesses published sustainability reports in 2021.[vii] This includes many of the largest global businesses. For example, within the SMI network, businesses representing a combined US$1.3 trillion in total revenue have indicated they plan to directly reference their collaborative work in sustainability as part of their 2022/2023 reporting. Beyond reporting about their sustainability, businesses are increasingly shifting to comprehensive sustainable business models to ensure long-term growth that works both for the planet and their finances. For example, over 4,000 businesses are engaged with the Science Based Targets initiative (SBTi) and over 2,000 businesses have approved carbon targets, meaning their carbon reduction targets have been validated by SBTi.[viii]

While the global reach of these businesses indicates positive progress, the transition will not be successful unless further fundamental change in business models is undertaken across all industries and businesses and significant effort is made to meet these set targets.

A shift towards a circular economy is occurring globally

One of the key shifts towards more sustainable industries is occurring through businesses embracing circular economy practices. The circular economy is a model of production and consumption where the life cycle of products is extended for as long as possible by either sharing, leasing, reusing, repairing, or recycling. With an increasing global population, the demand for raw materials is continually increasing while their supply remains limited. Hence, to reduce pressure on the environment, **Article 1** highlights the imperative for a move towards a more circular economy. There has been a significant increase in the focus on circular economy practices over the past few years, with the number of impact funds targeting the circular economy theme increasing exponentially. In 2018, just eight impact funds were launched with a focus on the theme, although this increased dramatically to 41 funds in 2021.[ix] This momentum is showing no signs of slowing down, with a 2020 report published by the Ellen MacArthur Foundation detailing expectations that the sharing economy market will grow twentyfold by 2025.[x] Circular economy principles are creating value for the financial sector, which shows strong confidence in long-term value creation.

Supply chains are being reinvented globally

Supply chains are inextricably linked to the concept of circularity. A sustainable supply chain is one that encompasses sustainable raw materials sourcing, efficient last-mile logistics and robust recycling processes.[xi] To attain such a supply chain, businesses must shift from linear processes to circular ones, particularly in the areas of environmental responsibility, labour practices, and human rights. A 2022 EY survey of 525 CEOs of large businesses found that 70% of CEOs expect to see increased revenue by transitioning to more sustainable supply chains and 70% expect to have increased customer loyalty from doing so.[xii] While the market certainly exhibits strong demand for more sustainable supply chains, the data shows that significant action is still required by the private sector to fulfil this demand. While 10% of the businesses in the same EY survey reported plans to reach net zero in their supply chains by 2025 and 22% by 2040, none of the businesses surveyed had reached this goal in 2022. Given the importance of supply chains in reaching net zero, it is clear that concerted, collective action is needed by businesses in alignment with Article 1 as part of their strategic planning to 2030.

70% of CEOs expect to see increased revenue by transitioning to more sustainable supply chains.

How has the SMI made an impact on Article 1 in 2022?

The collaborative efforts of the SMI have encouraged the reinvention of business models and supply chains through its industry Task Forces. The private sector must continually challenge itself to make business evermore sustainable, and businesses should continue to work with competitors within their sectors and supply chain partners to further decarbonise and improve the environmental impacts of their direct and indirect business activities.

SMI businesses are driving Global Demand Signals in sustainable procurement

In 2022, SMI businesses have driven global market demand through commitments to sustainable procurement. SMI businesses with an aggregated annual revenue exceeding US$1.2 trillion have committed to ensuring sustainability is central to their procurement and supply chain decision-making processes to help accelerate a just and sustainable transition.

The SMI Agribusiness Task Force produced an action plan for scaling regenerative farming

Throughout 2022, the SMI Agribusiness Task Force set out to identify what can be done by the private sector to accelerate the adoption of regenerative farming. To address the threat presented by climate change and biodiversity loss to a resilient and sustainable food supply, regenerative farming at scale is imperative to achieving net-zero commitments and preventing future supply disruption.

There are three main reasons why regenerative farming is not scaling fast enough:

- The short-term economic case is not compelling enough for the average farmer.
- There is a knowledge gap in how to implement regenerative farming.
- Drivers in the value chain aren't aligned to encourage regenerative farming.

After conducting interviews with farmers and other stakeholders, the Agribusiness Task Force was able to fully understand how the current value chain and market conditions may be creating a barrier to the adoption of regenerative farming practices and identified examples of interventions demonstrating potential to achieve mainstream scale. Based on their learnings, the Agribusiness Task Force has created an action plan around three case studies to explore different value chains. These include a smallholder rice farmer in India, a commercial contract potato grower in the UK, and a mid-large family farm growing wheat in the US.

To read more about the action plan, click here

"Agriculture is an ecosystem of complex and interconnected networks, where the actions of individual players impact on others. Interaction, coordination and collaboration are critical to finding the right solutions to bring about powerful change at pace."

- Dame Alison Rose,
CEO, NatWest

Grant Reid, CEO, Mars, speaking on the action plan for scaling regenerative farming at COP27

The SMI Insurance Task Force created the Sustainable Supply Chain Pledge

The SMI Insurance Task Force's Sustainable Supply Chain Pledge demonstrates the power of businesses convening within industry and influencing supply chains. In 2022, this pledge has called upon insurers to help the businesses they insure to delve into their supply chains and reach net-zero targets. As of November 2022, 13 major insurance businesses have signed the pledge as well as the Association of British Insurers, who represent over 200 member businesses managing investments of nearly £1.7 trillion.[xiii]

Pledge signatories have committed to take into account the emissions within their direct supply chain by focusing on three key actions:

- Encourage and help suppliers to set meaningful sustainability targets with an ultimate goal of adopting Paris-aligned net-zero targets.
- Advance initiatives with a goal of measuring the carbon footprint of insurance supply chains and report transparently on progress.
- Work to tackle supply chain carbon hotspots.

This collective work is helping to deliver **Article 1**, accelerating the transition to a net-zero future, and producing a significant impact on the emissions of the overall economy.

To read the pledge and see the businesses involved, click here

To read the best practice guidelines produced by the Task Force, click here

> "Alongside partnering with our customers to insure their transition, encouraging our suppliers around the world to embed sustainability into the goods and services they provide, including the choices we give customers as we help them manage risks or recover from loss, will ensure we are playing an active role in cross-sector decarbonisation at pace."
>
> **- John Neal**
> CEO, Lloyd's and Lead, SMI Insurance Task Force

Spotlight on: The Tyre Collective

In collaboration with the Royal College of Art (RCA), the Terra Carta Design Lab has brought together art, science, design, and engineering, inviting RCA students and alumni to develop credible and sustainable solutions to the climate crisis.[xiv]

Contributing to the **Article 1** objective of innovating around circular systems within planetary boundaries, one of the winning innovations of 2022 put forward a device capturing the second largest microplastic pollutant: pollution caused by tyre wear from vehicles. The Tyre Collective's solution reuses the fragments in the production of new tyres and other materials, such as ink.[xv] Thanks to their ingenuity, the device designed creates a closed-loop system and contributes to accelerating the shift to zero-emission mobility. Scaling this and other innovations will be key to delivering on the sustainable industries of the future.

The Tyre Collective exhibition stand at Terra Carta Action Forum at COP27

Spotlight on: Ampd Energy

The Ampd Enertainer is an advanced, compact, and connected battery energy storage system designed to replace the dirty, noisy, and hazardous diesel generators that power the world's construction sites. The construction industry is one of the most polluting, producing 11% of the world's energy-related energy-related carbon dioxide (CO_2) emissions.[xvi] As such, it is crucial that this industry makes a significant effort to pivot towards more sustainable practices, and the Ampd Enertainer goes a long way to supporting in this mission. Switching a construction site from reliance on diesel generators to the Ampd Enertainer could reduce air pollution by the same amount as the emissions from three hundred cars and curbs 130 tonnes of CO_2 a year.

To read more about Ampd Enertainer, click here

Spotlight on: The City of Amsterdam

Natural resources are constantly being used more than can be produced or restored, thus the circularity of materials and their life cycle in general should be carefully addressed throughout industries and value chains. The City of Amsterdam has pledged to become a circular economy by 2050 and halve its use of new raw materials by 2030. As **Article 1** emphasises, it is critical to work cross-industries to scale the impact of solutions with a positive environmental impact and, as a city of nearly one million people and offering a wide range of services, Amsterdam will have to address challenges across a wide range of industries to achieve these goals, whilst changing residents 'ways of thinking towards a 'rethink-and-reuse' attitude.

The city has already made significant progress on their circular economy strategy and have built a circular monitor that tracks all material streams in the city to help monitor and prioritise materials and their life cycles.

To read more about City of Amsterdam and its Circular Economy commitment, click here

Focus areas for 2023 and beyond

Recognising the urgency to act, **Article 1** calls on the private sector to put sustainability first in every action it takes. The vision of industrial growth must be shifted from images of combustion and smoke to one of circular economies, renewable energy, and clean cities.

Actions to be undertaken by industries

1. Ensure a just and sustainable transition using a 'future of industry' and 'future of economy approach'.
2. Explore and innovate around circular systems within planetary boundaries.
3. Create and accelerate sustainable industries, businesses, products, services, and supply chains while working within and across industries to scale climate and Nature-positive solutions.
4. Support the harder-to-abate industries to more rapidly transition to a net-zero and Nature-positive position, recognising that these industries are part of the solution.
5. Encourage innovative financial instruments to scale and accelerate transition efforts across businesses, industries, and countries.
6. Encourage the adoption and use of common metrics for measuring and reporting on sustainability within supply chains.

Actions to be undertaken by businesses

7. Make a sustainable future the growth story of our time.
8. Leverage global innovation centres, moon-shot and design thinking, disruptors, scientists, engineers, young people, artists, designers and thought leaders to reimagine a sustainable future.
9. Minimise waste and the exploitation of natural resources and develop protocols and regulations to avoid interference and exploitation of planetary ecosystems.
10. Seek out and showcase emerging solutions and 'living laboratories' to demonstrate and scale up sustainable market opportunity.
11. Make net-zero and Nature-positive commitments value chain driven.

ARTICLE 2

Default Sustainable

Introduction

To truly be able to change behaviour and the course of action towards a more sustainable future, **Article 2 – Default Sustainable** invites private sector industries and businesses to embed sustainability into their business models and make sustainability the default setting for all they do. To support this, management and boards must adopt a default sustainable mindset as the foundation of decision making.

Article 2 highlights the need for collaboration to support this fundamental change, with businesses driving acceleration by sharing best practice across industries.

Becoming sustainable by default is key in businesses' journeys to 2030

Until recently, businesses have largely been developing ESG plans in parallel to their strategic plans, which has unsurprisingly left a plethora of blind spots within businesses' operations. Many businesses have been appointing Chief Sustainability Officers (CSOs) as part of their C-suites, hoping this new function will accelerate the delivery of their carbon neutrality targets.[xvii] Whilst CSOs are key to accelerating sustainability action within businesses, sustainability must also be considered as part of the day-to-day operations, from administration to business strategy.

In PwC's 2021 Global Investor Survey, 89% of respondents agreed that businesses should include sustainability within their business strategies.[xviii] Despite this recognition, only 60% of businesses have produced sustainability strategies.[xix] These figures show the level of change required to truly embed sustainability considerations at the heart of business models.

89%

of investors agree that businesses should include sustainability within their business strategies.

Carmine Di Sibio, Global Chairman and CEO, EY, speaking at the May SMI CEO Summit at St. James's Palace

> "The private sector brings innovation, skills, and capital to help address the challenges we all face with climate change. Working collaboratively with the public sector and other organisations, we can reach critical goals faster. This is the work we are doing at the Sustainable Markets Initiative."
>
> **- Carmine Di Sibio**
> Global Chairman and CEO, EY

Global Picture

Governance is critical to driving ESG action

Recent years have seen an increased focus on setting and monitoring ESG targets, in the context of increasing investor and public expectations. Almost 90% of investors state that a business having a strong ESG programme and performance would have a significant and direct impact on analyst recommendations.[xx]

Going even further, the Task Force on Climate-Related Financial Disclosures (TCFD) recommends linking executive remuneration to the progress made towards these ESG targets, a significant move in embedding sustainability within businesses' structures and processes.[xviii] Their framework encourages firms to disclose how climate-related risks and opportunities are considered by management and boards, as well as to detail if climate-related targets are linked to executive pay.

However, an EY and Financial Education & Research Foundation survey found that only 52% of finance executives indicated they have the governance structure to facilitate internal and external ESG reporting.[xxi] On top of that, only 8% of the executives felt they had a relatively complete and robust set of policies and procedures to drive consistent collection and reporting of ESG data.

The insurance industry has developed leading examples of driving a Default Sustainable mindset

The insurance industry has built considerable expertise in applying knowledge to real world risk transfer and capital management to protect societies, industries, and economies from nature's most volatile natural perils.[xxii] As of 2021, 95% of global insurers believed climate risk to be an investment risk according to a BlackRock Global Insurance Survey. With 2021 recording an unprecedented number of natural disasters, sustainable investing has continued to rise in prominence among global insurers, reflecting the tectonic shift towards sustainable investing, which has the potential to generate better risk-adjusted performance.[xxiii]

Creating Default Sustainable business models will help build stability and resilience

With geopolitical and cost of living issues at the forefront of many government and business decisions in 2022, there is a risk of businesses deprioritising sustainability.[xxiv] However, it is now accepted amongst executives that having ESG central to business decisions drives growth and improves long-term financial performance.[xxv]

An early, progressive example of a business embedding ESG practices into its strategy is that of 3M. Its "Pollution Prevention Pays" programme focuses on preventing pollution by reformulating products, improving manufacturing processes, redesigning equipment, and recycling. Reusing waste from production has saved US$2.2 billion since its introduction.[xxvi] In addition to reviewing their operations, 3M adopted corporate governance principles in line with their commitment to the environment and society. Amongst these principles, there are the rights and responsibilities of different groups, the board's role in risk oversight, and its public policy engagement. 3M serves as proof that sustainable practices can meet the long-term interests of stockholders and further public trust in a business. In 2022, 3M was recognised in the World's Most Ethical Companies® programme, managed by the Ethisphere Institute for "shaping future industry standards by introducing tomorrow's best practices today."[xxvii]

By embedding sustainability in digital, risk and governance processes, businesses have the ability to strengthen their resilience.[xxviii] However, there is more to do across industries, as most businesses have not yet fully planned the integration of ESG across their operations to be truly sustainable by default.[xxix]

Baroness Patricia Scotland giving a keynote speech during the panel on 'Accelerating the Transition to Net-Zero Health Systems' at Terra Carta Action Forum at COP27

How has the SMI made an impact on Article 2 in 2022?

SMI companies are driving global demand signals in paper and plastic alternatives and renewable energy

Whilst sustainability concerns may be more material to some businesses' operations, the vast majority of businesses are likely to use plastics and paper in their operations in some form – this may be as part of a production process, or simply for day-to-day office use. As such, one way that businesses can help to reduce waste and improve their impact on the environment is to make a commitment to use plastic alternatives and recycled paper in their offices. In 2022, SMI companies have contributed to a reduction in paper and plastic waste through a range of examples, such as Sanofi committing to remove all blisters from syringe packaging.[xxx]

Another way businesses can improve their environmental impact is to use renewable energy in their operations and offices. In 2022, many SMI companies have made a commitment for their entire building portfolios' energy demand to be supplied from renewable sources. Of these, businesses with aggregated revenue in excess of US$584 billion were using renewable energy across their building portfolio. This collective demand signal will have huge impacts on global demand for renewable energy, encouraging the creation of more renewable energy production capacity and gradually shifting the economy away from its reliance on polluting fossil fuels.

The SMI Health Systems Task Force announced joint action to accelerate net-zero health systems at the Terra Carta Action Forum

The connection between climate change and the health of humanity is proven and profound. Non-communicable and infectious diseases, malnutrition, threats to mental health and premature deaths are all increasing because of the climate crisis, with vulnerable populations most at risk. Health systems are responding to the impacts of the climate crisis but are also responsible for 4-5% of total global emissions.

Ahead of the Terra Carta Action Forum held in Egypt at COP27, the SMI Health Systems Task Force announced shared commitments to decarbonise health systems by pledging to:

- Set ambitious emissions reduction targets, including near-term targets aligned to the 1.5-degree pathway and reaching net zero by 2045 at the latest – a key theme in the Terra Carta's **Article 4**.
- Jointly explore and pilot innovative solutions to decarbonise logistics at scale and increase access to green energy, including in China and India, in alignment with the Terra Carta's **Article 5**. The Task Force is also committed to leverage digital solutions to increase sustainability in clinical research.

- Collaborate to develop standards and methodologies to assess and reduce healthcare-related emissions – a central theme of **Article 9 - Adopt Common Metrics and Standards.** This includes aligning on common supplier sustainability standards, but also developing new methodologies to assess the environmental footprint of treatments, and patient care pathways more broadly.

Given the scale of the challenge, all stakeholders must work together to accelerate the delivery of net-zero health systems. The Task Force has published three white papers outlining practical recommendations and scalable actions to decarbonise supply chains, clinical research, and patient care pathways:

1. Decarbonising healthcare supply chains
2. The digital solution for sustainability in clinical research
3. Decarbonising patient care pathways

These commitments and recommendations were echoed in 75+ media publications across the world, and shared with 200+ high-level stakeholders including government, business leaders, NGOs, and academic leaders at COP27. Going forwards, the Task Force will continue partnering with the WHO-convened Alliance for Transformative Action on Health and Climate (ATACH) to put these recommendations into practice. Through its creative and impactful #PatientEarth campaign, the Task Force is also raising the general public's awareness of the link between climate change and health.

Rising to the call of the Terra Carta, the Task Force is taking concrete actions to tackle healthcare emissions and is setting an example for their industry to further the transition to a default sustainable mindset.

To read more about the reports, **click here**

Health Systems Task Force panel at Terra Carta Action Forum at COP27

The SMI Insurance Task Force released the Disaster Resilience Framework

Developed by the SMI Insurance Task Force, the Disaster Resilience Framework aims to provide central authorities with a framework to proactively manage the impact of climate perils, enabling direct access to risk financing and disaster mitigation support to offer effective and sustainable protection to those in greatest need. It is an empowering and essential solution for protecting society's most vulnerable who, in a scenario of even a 1.5-degree temperature rise, will face climate risk extremes that will significantly jeopardise their way of life.

The Task Force has developed an adaptable, scalable framework showing how insurers and investors can provide a blended finance solution that aligns to the sixth theme of **Article 2**, calling for products and services to be people, climate, and Nature-positive.

This comprehensive framework has been created by industry experts from a variety of disciplines, and with varied experience in the field of disaster risk financing. It offers sovereigns access to a broad range of risk management approaches, which can be tailored to the distinct and unique needs of each nation.

To read more about the report, **click here**

Investor Leadership Network, Lloyd's, HSBC, StateStreet and Bank of America on Financing the Transition panel at New York Climate Week

Spotlight on: Roam

In line with **Article 2's** aim of making products become climate positive, Roam's work is a great example of broadening the accessibility of electric mobility for all of East Africa. Almost 6% of residents in East Africa rely on high-emitting motorcycles for their daily income. Quality, affordability, and reliability are key factors in developing electric vehicles and Roam is committed to producing electric alternatives with these qualities, with the aim of producing 150,000 motorcycles and 800 buses per year by 2026. In addition, Roam focuses on making a positive social impact – they currently have 40% female employees, and all of their products are designed locally.

To read more about Roam, click here

Focus areas for 2023 and beyond

In order to transition to a fully sustainable economy, businesses and industries must strive to make sustainable business the go-to option. As such, **Article 2** calls upon businesses to ensure sustainability is a key consideration in all decision-making processes and, therefore, in all business decisions and operations.

Actions to be undertaken by industries

1. Embrace and foster human ingenuity, creativity, and design, along with advances in technology, to deliver the sustainable change needed across industry, business, and investment systems.

2. Share lessons learned and best practices, while maintaining healthy competition, within and across industries to reduce duplication of effort and to enable acceleration of businesses, industries, and countries.

Actions to be undertaken by businesses

3. Embed a 'Nature, People & Planet' orientation into businesses' vision and mission statements, operations, financing, reporting, consumer communications, procurement, and supply chains; recognise the importance of resilience and sustainability within industry systems.

4. Educate the workforce on ESG issues and engage board members, employees, shareholders, and consumers in an ongoing improvement dialogue around ESG, transition roadmaps, sustainability priorities and reporting.

5. Make sustainability the responsibility of the entire management team.

6. Improve products and services to be people, climate, and Nature-positive.

7. Work towards carbon neutrality and net zero across Scope 1, 2 and, where possible, Scope 3 emissions. Also, raise awareness of the need to resolve the unpriced externality of continued emissions, including an incentive structure to reduce those emissions.

8. Set measurable targets and communicate sustainability results to board members, employees, shareholders, and consumers on a regular basis.

ARTICLE 3

The Power of Consumers

Introduction

The sustainable business models discussed in **Article 1** and **Article 2** create foundations for the transformation of businesses and industries. **Article 3 – The Power of Consumers** highlights the power of individuals to drive the transformation to sustainable markets. With the foundation of sustainable business models, **Article 3** calls upon businesses to go further and engage with consumers in their decision-making by providing transparent information about products and services. Such transparency requires drastic changes to current ways of doing business, such as increasing transparency of supply chains, providing visibility into the working conditions of employees, and communicating information in a way that empowers consumers to make informed purchasing decisions.

Consumers can have a substantial impact on global demand

Consumers play an integral part in creating demand signals for sustainable products. Increasingly, consumers are demanding disclosure, transparency, and traceability throughout supply chains. Recent studies have shown that 84% of consumers say sustainability is important when making purchasing decisions. This is forcing businesses to share information about the procurement, production, and life cycles of their goods, and then to improve the sustainability impacts of them. Where innovation is needed, consumers are demanding innovation; and where innovative solutions already exist, consumers are demanding affordable options. Affordability is key to making this a transition everyone can partake in, with studies showing that 47% of consumers feel it is currently cost prohibitive to buy sustainably, where these options are available.[xxxi] To stay relevant and competitive, economic actors must listen and respond to consumer expectations as they evolve.

84% of consumers state that sustainability is important when making purchasing decisions.

Global Picture

Consumers are becoming increasingly engaged with sustainability-related issues

Consumer spending can account for as much as 50% to 75% of GDP, depending on the economy.[xxxii] History has shown that consumers have great power in moving both corporate behaviour and regulation towards becoming more sustainable. Individuals, not businesses or governments, were the ones to awaken the public to issues of climate and sustainability and this movement continues to gain traction. The example of the environmental activist Greta Thunberg has shown how singular voices can reverberate across the global

consciousness, and across the world individuals are now feeling empowered to act and make a personal or collective impact. A recent study, prepared by Dentsu and Microsoft, demonstrates that 59% of consumers are prepared to force change and climate action by boycotting businesses seen as failing to prioritise the environment.[xxxiii] With the current generation of young people being brought up surrounded by talk of climate change and other environmental issues, it is understandable they seem keen to engage with and tackle these issues through their lifestyle choices.

There is perhaps no better way for people to see the change in a society they want than to act with their purchasing power. Businesses respond more quickly to consumer demand than other factors, and the same is true for consumers demanding more sustainable products and services. Nevertheless, there are still significant barriers that prevent all consumers from making ecological choices. In many product areas and geographies, sustainable alternatives are either too expensive for the average consumer or simply do not exist.

Consumer spending can account for as much as 50% to 75% of GDP, depending on the economy.

Shifting to sustainable options is not equally accessible to all consumers

There are several factors that can impact the effectiveness and fairness of a transition towards more sustainable products. First, a consumer must have options of products available to them. In some areas, consumers may not have access to certain products, and so it is key that these consumers are still supported – perhaps through products that improve the sustainability of the options that are available to them, such as the provision of more sustainable fuels for internal combustion engine vehicles. Once consumers have choices, they need to be educated on and supported with understanding these options and making better purchasing decisions, perhaps through labelling or government-led campaigns. Finally, consumers must have access to the appropriate finance to purchase the products of their choosing, thus harnessing their purchasing power and influencing demand. If any of these factors are unavailable to a consumer, there is a risk that the transition to more sustainable alternatives may not be a just one.

While it may be easy for some consumers to switch to sustainable alternatives across most aspects of their lives, others will be priced out. A 2020 study discovered that sustainable products are, on average, 75-85% more expensive than conventional products. In many cases, these increased costs are due to increased costs of production, such as the use of better-quality and longer-lasting materials, or due to workers within the supply chain being paid a fairer wage.[xxxiv] Production costs usually account for the smallest amount of a product's full cost, and businesses tend to mark up prices due to the increased costs of obtaining sustainability-focused certifications, the introduction of services to repair products, and the lessened economies of scale often faced by more sustainable alternatives.

If all the true costs are taken into account, including the cost to Nature, being socially and environmentally responsible should be the least expensive option because it leaves the smallest footprint behind. When thinking of consumers, being socially and environmentally conscious cannot only be for those who can afford it.

Transparency is becoming increasingly critical in business operations

One of the main challenges consumers face in making more sustainable choices is misleading labelling coupled with a low sustainability literacy rate.[xxxv] More needs to be done in this area, both through educating consumers and in guiding businesses on understanding and communicating their sustainability credentials. In 2020 in the UK, the variety of existing voluntary and non-regulative independent sustainable certifications led to an 18% increase in boycotts of businesses on ethical grounds.[xxxvi] A way to drive more transparent communication is by creating independent and reliable certifications that consumers can trust when evaluating the sustainability impacts of a product, which will be the subject of **Article 9 – Adopt Common Metrics and Standards.** For now, there are only voluntary certifications, with the two most globally known being B Corp[xxxvii] and Carbon Trust[xxxviii]. The number of submissions for certifications and increasing sales of sustainable products clearly demonstrates an increase of consumer engagement with sustainably produced products.

Consumer rights and regulations can support the shift to a circular economy

Consumer expectations are not only about transparent information; there are many examples of instances where increasing sustainability-related consumer demands have contributed to significant change. One example of this is the right-to-repair movement, in which consumers have collectively called on policymakers and regulators to improve consumer rights and support the transition towards a more circular economy.

There have been numerous cases where businesses have limited consumers' ability to repair their products through not providing options for ongoing support and updates. As a result, consumers were discouraged from repairing their products and, therefore, driven towards purchasing replacements. Born out of the "Right to Repair" grassroot movement, there are now several jurisdictions that passed repair-friendly regulations.[xxxix] Such regulation improves consumers' rights, whilst encouraging the shift towards a more circular economy by reducing the number of new products that must be produced and the waste caused by old, redundant products.

These regulations are particularly impactful in the technology industry, as they allow consumers to repair personal electronics, such as mobile phones and laptops, either themselves or through third-party repair businesses, without threat of exclusion from future software updates or fixes. This helps to reduce global demand for the minerals used in the production of devices and their batteries, reducing the harmful impacts of their mining, and reduces the significant emissions caused by their production.[xl] Another example of a repair programme that has been implemented by a business can be found in the business operations of Patagonia.[xli] Since its foundation, the brand encouraged its consumers to extend the life of their garments, to avoid the CO_2 emissions, waste output, and water usage required to build them.

Businesses' sustainability credentials can impact employment decisions

Another way consumers have power to influence change and make lifestyle decisions is in determining who they will work for. 71% of employees and employment seekers stated that environmentally sustainable companies are more attractive to work for and 48% said they would accept a lower salary to work for an environmentally and socially responsible businesses.[xlii] This research suggests that sustainable businesses have better recruitment and retention prospects, possibly encouraging competition to adjust their practices to attract potential employees.

How has the SMI made an impact on Article 3 in 2022?

The SMI Fashion Task Force is leading the rollout of Digital ID technology

The rollout of Digital ID technology, has been led through the SMI Fashion Task Force. This technology that uses data to inform customers of the sustainability credentials of their purchases and facilitate the delivery of circularity at scale. Giving products a Digital ID will allow manufacturers, brands, retailers, resellers, and recyclers to provide unprecedented transparency and traceability of the products they sell. It will also unlock new circular services for customers, such as care and repair services, as well as ones focused on resale and recycling.

The ultimate objective is to provide customers with access to credible information about how products are designed, manufactured, and distributed, thereby empowering customers to make more informed sustainable purchase choices. At the same time, the lifecycle tracing element of the Digital ID system aims to extend the longevity of products and enable brands to scale circular business models.

Members of the Task Force have committed to begin the Digital ID roll-out process within their brands, along with the adoption of a circular data protocol. So far, Mulberry, Chloe, and Johnstons of Elgin have all launched the Digital ID within their product lines. The Digital ID is an excellent example of how businesses can embed the ideas of circularity and transparency into one of the most ubiquitous and personal products people purchase.

The Fashion Task Force has also launched a Manifesto for Regenerative Fashion to accelerate progress on key sustainability issues within the fashion industry, which will be covered in **Article 5 - Game Changers & Barriers.**

HM King Charles III at the launch of the SMI Fashion Task Force's Digital ID

> "The fashion industry is an incredibly creative and economically powerful world. If it is to survive and indeed thrive in the future, it has to use technology to put sustainability at the very heart of its operating models."
>
> **- Federico Marchetti,**
> Founder, YOOX NET-A-PARTER Group and Chair, SMI Fashion Task Force

The SMI Energy Transition Task Force released a report detailing how businesses can place customers at the heart of the energy transition

Article 3 calls upon industries to identify, develop, and improve sustainable alternatives that are high in quality, ensuring a positive consumer experience as well as affordability. Aligning with the latter, the Energy Transition Task Force's report 'Putting Customers at the Heart of the Energy Transition' highlights ways the energy sector is innovating products and services to meet both energy and evolving consumer demands. While the world urgently needs to decarbonise the energy system to fight climate change, society also must provide access to clean, reliable energy to the nearly one billion people currently without electricity. This transformation cannot simply be driven by energy businesses and producers making decisions for people - it must have customers at its heart.

The energy transition relies on people changing the way they power and heat their homes and the forms of transport they use. It relies on businesses seeing a commercial case for investing in green energy and reshaping their businesses to take advantage of it. This report calls for energy businesses and the finance community to take specific actions. On one hand, the energy sector uses data and wider insights to be more customer centric. On the other hand, the finance community must look for opportunities to develop new products that will help customers pay for the energy transition, for example changing traditional mortgage loans to help domestic customers pay for home upgrades like insulation, solar panels, or heat pumps.

Moving forward requires energy businesses, large businesses, and the finance community to work in partnership to make the transition attractive, easy, and affordable for customers. Reflecting the ethos of the Sustainable Markets Initiative, this report encourages business leaders to come together, to share learning and find new ways to collaborate, putting customers at the heart of the transition.

To read more about the Energy Transition Task Force's report, click here

"The private sector is leading the way in helping drive a just transition to a low-carbon, sustainable future. Working with the public sector, we can accelerate progress towards clean-energy security and a just transition."

- Brian Moynihan,
Chair and CEO, Bank of America and Co-Chair, Sustainable Markets Initiative

CEOs of bp, Macquarie and Lloyd's on the 'Accelerating the Energy Transition' panel at Terra Carta Action Forum at COP27

Spotlight on: AMPHIBIO

The fashion start-up AMPHIBIO aims to tackle performance outdoor textiles that use many harmful chemicals and are difficult to recycle. Their first 100% recyclable and chemical-free outdoor performance textile, AMPHITEX, combines longer life cycles with recyclability due to the bonding mono-materiality of each layer, without the toxicity generated during manufacturing. The clothing is both less wasteful and does not degrade into microplastics. In 2023, AMPHIBIO will launch its recycling pilot and develop bio-based feedstock that can be integrated with their current raw materials without compromising the recyclability.

To read more about AMPHIBIO, click here

AMPHITEX exhibiting at the Terra Carta Action Forum at COP27

Spotlight on: HowGood

Furthering **Article 3**, HowGood provides a best-in-class example of how to improve consumer-level communication and transparency related to the sustainability footprint of products. SMI Agribusiness Task Force member HowGood is a data platform with the world's largest database on food and personal care product sustainability. Through in-depth insights on factors ranging from GHG emissions to animal welfare and labour risk, HowGood data powers strategic decision-making for the sourcing, manufacturing, merchandising, and marketing of sustainable products.

In 2022, HowGood published a playbook to provide the roadmap for brands to measure, improve and communicate on the sustainability of consumer-packaged goods. The playbook explores the economic benefits of pursuing a sustainability strategy and how to go about it. Rather than promoting further use of product labelling like organic or Fairtrade, HowGood recommends going beyond certification to include outcome-based measurement metrics like GHG production and soil health.

To read more about HowGood's playbook, click here

Spotlight on: Bank of America

In 2022, Bank of America hosted its second annual virtual electric vehicle show,an online convention experience premiering on World Electric Vehicle Day (September 9, 2022) which featured presentations by auto industry leaders, manufacturers, and electric vehicle experts.[xliii] The event, entitled "EVolution", offered the public the opportunity to gain timely insight about design trends, car features, charging, financing, and sustainability.

Manufacturers including Daimler Truck North America, Lucid, Mercedes Benz and Volvo Cars showcased their latest offerings; thought leaders from Bank of America, Forth, EVgo, and Go-Station discussed a range of EV trends and topics, including environmental sustainability and advances in sustainable transportation and infrastructure. As electric vehicles make their way into the mainstream auto market, understanding how to select and finance their purchases is becoming increasingly important to consumers. The SMI encourages other large players in the automobile market to model Bank of America's approach to educating consumers about this burgeoning market.

To read more about the event, click here

Focus areas for 2023 and beyond

Consumers have a key role to play in driving and influencing sustainable business across the economy and the private sector. In recognition of this, **Article 3** calls upon the private sector to support consumers to harness this power and accelerate the transition towards a more sustainable economy.

Actions to be undertaken by businesses and industries

1. Improve consumer-level communication, transparency and education related to organisational sustainable impact and the sustainability footprint of products and services.

2. Identify, develop, and improve sustainable alternatives that are high in quality, consumer experience, and affordability.

3. Improve consumer feedback loops to enhance satisfaction with the sustainability of products and services.

4. Explore sustainability labelling and help inform consumer decision-making while driving up demand for sustainable products and services.

5. Work across industries to make consumers aware of industry-wide efforts, helping consumers to make cross-industry comparisons.

6. Support industry-wide consumer awareness campaigns around sustainability, including the changes needed and being advanced around sustainable products and services across the value chain.

ARTICLE 4

Accelerate and Align Industry Roadmaps

Introduction

In order to reach global sustainability targets, such as those set out in the Paris Agreement, industries across the economy must align their transition plans and develop industry-wide targets and metrics. Successful roadmaps should be agreed both within and between industries and be made publicly available to maximise engagement from businesses and increase transparency. To drive this action, **Article 4 - Accelerate and Align Industry Roadmaps** calls upon industry leaders and the private sector to agree on global metrics and roadmaps, including net-zero targets, industry frameworks, and commitments to global pledges. This work will be further strengthened by the universal adoption of common metrics and standards, which will be discussed in **Article 9 - Adopt Common Metrics and Standards.**

The production of transition roadmaps will be key in the journey to a net-zero future

Substantial and rapid action is needed from all industries to reduce emissions of business activities and avoid the catastrophic impacts of climate change, from wildfires to flooding.[xliv] Across industries, businesses must set ambitious emissions reduction targets and work together to develop the roadmaps, tools and technologies needed to change business models and undergo a transition towards greener operations.

Economic arguments also support the adoption of sustainable practices. A 2022 study shows that businesses taking the boldest steps with regards to sustainability are 2.4 time more likely to report significantly higher financial value than expected and have achieved a larger reduction in emissions to date.[xlv]

Panel on The Private Sector's Pathway to Net Zero at Terra Carta Action Forum at COP27

Global Picture

There has been a significant increase in climate-related disclosures

The last decade has seen a dramatic increase in climate-related disclosures from the private and public sector, but there is still a long way to go in terms of alignment and roadmaps. A 2022 study of 506 CSOs found that only a third of their businesses have a climate change commitment for 2030, and less than half have plans in place to reduce emissions by 45% or more.[xlv]

The UN Principles for Responsible Investment found that, across the world's 50 largest economies, 48 have some form of policy designed to help investors consider sustainability risks, generally through improved disclosure of these risks.[xlvi] Notably, some regulators across the world are now requiring businesses to disclose their considerations of climate-related risks and opportunities through TCFD reports. Established by the Financial Stability Board in 2015, the TCFD now has over 4000 supporters from 101 countries with a combined market capitalisation of over US$27 trillion.[xlvii] The Task Force on Nature-Related Financial Disclosures (TNFD) is currently in the process of developing a framework to allow businesses to disclose and communicate their consideration of nature-related risks and opportunities, in a similar method to that for climate-related risks and opportunities through the TCFD.

A host of non-profit businesses have also made significant progress in developing disclosure frameworks, supporting the alignment of transition goals and roadmaps. For example, the Carbon Disclosure Project (CDP) has amassed disclosures from over 18,000 businesses representing 64% of global market capitalisation and over 1,100 cities, states, and regions. [xlviii] With its global environmental disclosure system launched in 2000, CDP was the first platform to leverage investor pressure to influence corporate disclosure on environmental impact. Today, it supports thousands of businesses to measure and manage their risks and opportunities on climate change. However, since it is a voluntary framework, inconsistent disclosure levels between businesses make it difficult to make informed decisions on capital allocation. Greater engagement and further formal regulation are needed if global climate targets are to be met.

Whilst there are signs of increased levels of disclosure worldwide, the average level of disclosure by businesses in Latin America and the Middle East and Africa regions is lower than that of North America and Europe, although an increase in regulation and focus on and awareness of ESG issues in these regions will likely begin to close the gap.[xlix]

The TCFD now has supporters with a combined market capitalisation of over

US$27tn.

Greater alignment on roadmaps will help to accelerate the battle against climate change

In 2021, the UK Chancellor announced British businesses will have to publicly disclose their net-zero transition plans by no later than 2023. The net-zero roadmaps must consider Scope 1, 2, and 3 emissions and are mandatory for all asset managers, regulated asset owners and listed businesses within the United Kingdom.[l] The US Securities and Exchange Commission has also announced its intention to begin requiring publicly-listed businesses to disclose their climate-related risks and impacts, such as GHG emissions.[li] The aim of these changes is to put regulatory pressure on businesses to understand and report on their environmental impacts. This will in turn help encourage businesses to reduce their impact while simultaneously leaving the regulatory infrastructure in place to allow for further requirements such as the reduction of emissions and resource usage.

These regulatory changes are encouraging, however, action must be taken by businesses in these countries, as well as in the rest of the world.

A study carried out by Lancet Planetary Health found that the Global North has been responsible for 92% of excess global emissions since 1850. North America had been consuming fossil fuels to power their economies to unmatched heights long before the science of the greenhouse effect was explained, with the US alone contributing to 40% of excess global emissions.[lii] The Global North must acknowledge this and ensure an equitable and just transition to a net-zero economy.

Reporting could be improved through alignment of frameworks

While financial market participants are increasingly demanding material ESG reporting, the market continues to be fragmented due to a lack of convergence of the many reporting frameworks. A recent report by EY and Oxford Analytica cited over 600 reporting frameworks with varying interpretations of sustainability.[liii] Current global frameworks opt for a one-size-fits-all approach to metrics collection, but often omit critical context, for example, stage of business or industry specificities. The formation of the ISSB at COP26 was a notable step towards bringing consistency and comparability to the wide array of ESG standards and frameworks. This will hopefully improve quality and consistency in data collection, however, realising change at this level will require time and education to systematically implement. Here, it is important to remember that reporting is not an end in itself but has concrete uses in decision-making. For example, once international metrics will be agreed upon, banks will create financial models incorporating these metrics and thus make more informed decisions in favour of the planet.

Overview of Scope 1, Scope 2 and Scope 3 GHG emissions

Scope 1

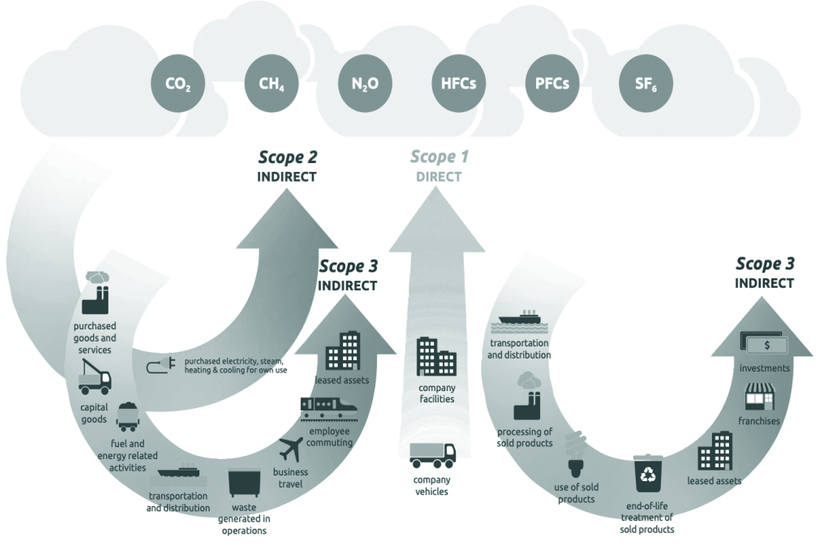
Scope 1 emissions are **direct emissions from owned or controlled sources.** Scope 1 includes emissions from on-site fossil fuel combustion and fleet fuel consumption.

Scope 2

Scope 2 emissions are **indirect emissions from owned or controlled sources.** Scope 2 inlcudes emissions that result from the generation of electricity, heat, or steam purchased from a utility provider.

Scope 3

Scope 3 emissions are all **indirect emissions** (not included in Scope 2) **that occur in the value chain** of the reporting company, including both upstream and downstream emissions.



Source: Greenhouse Gas Protocol

Ambitious corporate climate action- Science-Based Targets

What are "science-based targets"?

Science-based targets provide a clearly-defined pathway for companies to reduce GHG emissions, helping prevent the worst impacts of climate change and future-proof business growth.

Targets are considered "science-based" if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement- limiting global warming to 1.5-degrees above the pre-industrial levels.

Why companies should take action?

Through the 2015 Paris Agreement, world governments committed to curbing global temperature rise to 1.5-degrees above pre-industrial levels. In 2018, the Intergovernmental Panel on Climate Change warned that global warming must not exceed 1.5-degrees to avoid the catastrophic impacts of climate chage.

To achive this, GHG emissions must halve by 2030 and drop to net zero by 2050. There is limited time for action and the private sector has a crucial role to play. Every sector in every market must transform. Companies with science-based targets are already **cutting emissions at scale;** all businesses must now join them.

Scope 3 standards are helping businesses to understand their indirect emissions

Reaching consensus on global industry roadmaps is complicated, as is their implementation in a single business or industry. In addition to this, businesses are often required to consider the operations and emissions of the hundreds or thousands of other businesses that they work with as clients, suppliers and subcontractors.

The Corporate Value Chain Accounting and Reporting Standard, commonly referred to as Scope 3, provides a methodology that can be used to account for and report emissions from businesses of all sectors. The Scope 3 Standard allows businesses to assess their entire value chain emissions impact and identify where to focus reduction activities.[liv]

Scope 1 emissions are direct emissions from owned or controlled sources. Scope 1 includes emissions from on-site fossil fuel combustion and fleet fuel consumption.

Scope 2 emissions are indirect emissions from owned or controlled sources. Scope 2 includes emissions that result from the generation of electricity, heat or steam purchased from a utility provider.

Scope 3 emissions are all indirect emissions (not included in Scope 2) that occur in the value chain of the reporting business, including both upstream and downstream emissions.

2,253

businesses, representing one-third of global market capitalisation have approved emissions reduction targets or commitments with the SBTi.

The Science-Based Targets Initiative provides guidance on and verification of businesses' climate targets

The SBTi was founded during the Paris Agreement negotiations in 2015, mobilising the private sector to play a key role in the agreement goals through committing to science-based net-zero goals. Created through a partnership of Carbon Disclosure Project, UN Global Compact, World Resources Institute and Wild World Fund, SBTi engages with businesses spanning one third of global market capitalisation and verifies the carbon reduction targets of businesses accounting for 1.5 billion tonnes of carbon dioxide equivalent (CO_2e) annually.[lv]

The SBTi assesses businesses' targets and provides resources to set and measure science-based targets. To be considered "science-based", a target must provide a clearly defined pathway for a business to reduce GHG emissions in line with limiting global warming to 1.5-degrees. The SBTi's reach is significant – at the end of 2021, 2,253 businesses across 70 countries and 15 industries, representing more than one third (US$38 trillion) of global market capitalisation have approved emissions reduction targets or commitments with the SBTi.[lvi] Whilst this is a significant portion of the global economy, businesses in some hard-to-abate industries, such as oil and gas, are not yet SBTi-eligible, and so it is key that the initiative continues to evolve to support additional industries and businesses across the economy with their transitions.

The first Global Stocktake of the Paris Agreement is currently underway

The Paris Agreement calls upon each country to set its own plan for cutting emissions and adapting to climate impacts. The national climate change plan each country sets is formally known as its Nationally Determined Contribution (NDC). In order to assess the world's collective progress towards achieving the aims of the Paris Agreement, countries agreed to review their efforts and take stock of their progress every five years – this is called the Global Stocktake (GST). Each stocktake is a two-year process, with the first stocktake concluding at COP28 in 2023.[lvii]

The GST is important as it will help to hold countries accountable and will help national governments to understand what they have achieved so far, identify areas for future work, and highlight opportunities to further their climate action. Driving further action is key, as the 2021 NDC Synthesis Report confirmed that the world is not on track to keep warming below 1.5-degrees, with average global temperature rises projected to be just over 2-degrees if countries deliver on their 2030 NDCs and net zero commitments.[lviii]

How has the SMI made an impact on Article 4 in 2022?

SMI businesses are setting targets to become net zero

In 2022, SMI businesses with a combined revenue of over US$1.25 trillion made commitments to become net zero across their full value chain, incorporating Scopes 1, 2 and 3 by 2050 or sooner. Of these businesses, 41% have received or have applied to receive verification of their targets by SBTi.

Amongst them is Zalando, that adopted science-based targets for Scope 1, 2 and 3 emissions in 2020. In 2022, Zalando, partnered with two other online fashion retailers to offer a free service to help their brands measure greenhouse emissions, set reduction targets and submit them to the SBTi for approval. The free service will become available to all eligible brands in 2023. Zalando aim to have 90% of brand partners and suppliers (by emissions) set approved science-based targets by 2025.[lix]

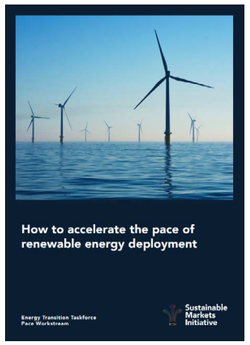
The SMI Energy Transition Task Force released a paper on Accelerating the Pace of Renewable Energy Deployment

Focusing on agreed targets for the energy sector, the SMI Energy Transition Task Force has collaborated on a report outlining the challenges countries face in making the renewable energy transition and has provided some recommendations to speed up the pace of deployment in hopes to increase the stability and resiliency of energy supply.

The report aims to address barriers in the feasibility and development phase of offshore wind, onshore wind, and solar. It assesses the feasibility and development phase of these renewable energy sources as it typically lasts between 6-10 years for offshore wind, 3-5 years for onshore wind, and 2-3 years for solar. This phase is where risks are highest due to uncertainty over scope, schedule, and cost. Reducing risk and uncertainty can shorten the duration of this phase as well as reduce the rate of attrition.

Their recommendations identified a set of 11 guiding principles, and address questions around critical pace-limiting factors, regulatory best practices, and grid efficiencies enhancement. It is an excellent example of identifying and providing recommendations on barriers to acceleration – a core theme of **Article 4.**

To read more about the Energy Transition Task Force's report, click here



International governments have adopted the 2050 Net Zero Carbon Goal for international civil aviation

In 2021, the global aviation industry committed to net-zero carbon aviation by 2050. The SMI Aviation Task Force, in collaboration with the World Economic Forum Clean Skies for Tomorrow initiative, has supported building knowledge and momentum among the aviation industry and other relevant stakeholders, such as governments for the International Civil Aviation Organisation (ICAO) to agree on a net-zero carbon goal by 2050, aligned with the Paris Agreement. ICAO's Assembly has adopted a net-zero carbon emissions goal by 2050 for international civil aviation in October 2022.[lx] The adoption sets a common framework at the UN level, giving the grounds for governments to develop their own policies to align with and implement this goal, according to their respective capabilities and responsibilities.

Concrete measures to achieve the decarbonisation of air transport include:

1. Increase the use of sustainable aviation fuels (SAF) and transition away from fossil fuels by mid-century as part of a wider aviation energy shift, including low-carbon electricity and green hydrogen. SAF is the key to decarbonise aviation by 2050, and the only option for long haul flights, which are responsible for 70% of aviation emissions.
2. Research, develop and deploy evolutionary and revolutionary airframe and propulsion systems, including the introduction of electric and/or hydrogen-powered aircraft.
3. Continue improvements in efficiency of operations and infrastructure across the system, including at airports and air navigation service providers.

To read more about the Commitment to Fly Net Zero by the industry, and see the organisations involved, click here

John Holland-Kaye, CEO, Heathrow Airport speaking on a panel on SAF at Terra Carta Action Forum at COP27

The SMI Private Equity Task Force released ESG Reporting Guidance for Portfolio Businesses

Financial market participants are increasingly demanding material ESG metrics reporting, with varying degrees of success. The market continues to be fragmented – not due to lack of work or a lack of frameworks, but rather lack of convergence. In accordance with **Article 4's** theme of industry road mapping and alignment, the Private Equity Task Force has produced a report outlining hurdles currently being faced by ESG metrics alignment. The key hurdles discussed are as follows:

1. Many different frameworks but little alignment.
    - Decision-useful data for portfolio businesses is industry-specific.
    - Limited Partners typically prefer universal/sector-agnostic metrics.
2. Limited Partners metrics requests lack consistency.
3. One-size-fits-all approach to metrics collection/ benchmarking lack context (type of fund, stage of business, etc.).
4. Level of ESG data collection is still nascent at many portfolio businesses - it will take time and education to capture systematically.
5. Potential liability for General Partners and Limited Partners in the collection and disclosure of particular metrics.

To tackle these hurdles, the various participating firms of the SMI Private Equity Metrics workstream developed a report to build consensus around the core ESG data use cases by private equity firms, provide an overview of common ESG frameworks and how they are utilised relative to each use case, and address key data considerations and potential unintended consequences.

The report proposes a common approach to selecting the most decision-useful metrics in a space that is often heavily populated with data and uses a number of case studies to illustrate how the framework can be deployed. Through sequentially defining the key materiality factors (i.e. geography or regulatory specifics) as well as industry specifics and the maturity state of the available metrics, it provides a thought framework to select the most pertinent metrics from standards such as SASB. This report will be made public in early 2023.

To read more about the ICAO Net Zero Goal, click here

Spotlight on: AECOM

Exploring new sources of renewable energy to accelerate the transition to net zero, AECOM is contributing to upgrading Italy's historic Apennine diesel railway with hydrogen trains. In collaboration with Iberdrola, Cinque International, and Ancitel Energy and Environment, the project aims to aid economic growth for the Apennine region and is a prime example of the private sector driving the decarbonisation of transportation systems. This ambitious project looks for ways to build back sustainably and is aligned with the aims of the European Clean Hydrogen Alliance, a European Commission-led group looking at the ambitious deployment of hydrogen technologies by 2030 to support the EU's commitment to reach carbon neutrality by 2050. It is just one in a pipeline of viable investment projects selected by the European Commission through use of its framework of activities for scaling up the deployment of green hydrogen in Europe.

To read AECOM's press release, click here

Spotlight on: Octopus Energy and ilke Homes

Octopus Energy has entered into a world-first strategic partnership with ilke Homes to deliver the UK's largest zero-carbon housing development in Essex, UK, in which residents will be guaranteed zero energy bills. By harnessing artificial intelligence, robotics, and digital design, ilke Homes is capable of creating homes that are incredibly well insulated, meaning less heat escapes and consequently reducing bills. In addition to this insulation, low-carbon technologies, such as solar panels and a heat pump, will be installed to provide cheap, clean energy, and battery technology will also be installed to store any excess energy produced.

To read the associated press release, click here

Focus areas for 2023 and beyond

In order to reach the targets set out in the Paris Agreement, businesses and industries must be prepared to act and move together, aligning upon industry transition pathways and accelerating action. **Article 4** recognises this and calls upon industries to collaborate and agree upon common roadmaps and targets whilst ensuring no one is left behind, regardless of geography or sector.

Key actions to be undertaken by businesses and industries:

1. Accelerate net-zero commitments to achieve them before the 2050 target.

2. Establish publicly accessible industry roadmaps, outlining steps for industry-level transition, which will also help guide businesses in the development of their own roadmaps. Industry roadmaps should consider elements that will be needed to overcome the transition such as:

- Common industry infrastructure and areas where innovation is required.
- Clearer ownership across the value chain, with defined roles and responsibilities.
- Integration of science-based targets into industry and company roadmaps.
- Inclusion of Scope 1, 2, and 3 (where possible) emissions as well as Natural Capital valuation.
- Agreed upon industry standards and metrics for measurement and reporting of opportunities, risks, challenges, and environmental impacts.
- Progress reporting, at least annually, against stated targets to maintain transparency with consumers, shareholders, supply chains and wider stakeholders.

3. Define industry-wide targets, metrics, business, and industry groups, considering the potential business value that can be realised through delivering on agreed targets.

ARTICLE 5

Game Changers and Barriers

Introduction

In **Article 5 – Game Changers and Barriers**, the private sector is called upon to identify, showcase and invest in emerging game-changing technologies and solutions for a more sustainable future. To accelerate tangible progress by leveraging these technologies, barriers must be identified and addressed – be it policy, regulation, infrastructure, or investment. This will require the cooperation of a wide range of stakeholders, including support from governments and policymakers to ensure the existence of an appropriate enabling environment.

Significant cross-industry game changers are needed to accelerate the green transition

As businesses have started to increase focus and investment in tackling some of the sustainability challenges facing Nature, People and Planet, it is apparent that significant changes need to be made to many business practices and global norms. In addition to creating sustainable industries and agreeing on global roadmaps, to make the drastic shifts needed to meet the Paris Agreement targets, private and public sector businesses will need to join forces to fund the development and implementation of new infrastructure and technologies. The next section will draw a picture of the game-changing iinnovation landscape and how their benefits are rapidly curbing the global fossil fuel dependency.

Global Picture

Game-changer No. 1: Green hydrogen

Fossil fuels are now widely accepted as being a key contributor to climate change and ecosystem destruction. Yet, 84% of global energy was produced by burning fossil fuels in 2019.[lxi] This percentage has been gradually reducing, but still demonstrates that there is a long way to go before energy will be solely produced by clean methods.

With ever evolving renewable technologies, solar panels and wind turbines are now cheaper than ever to install. Economic and political barriers still exist, however, which is slowing their transition to mainstream markets. Storing energy, for example, is critical to manage grid demand when wind and solar are not available in sufficient quantities. One key technological solution, large-scale battery storage, is still prohibitively expensive to deploy in many markets at an affordable price. A serious shift in regulatory investments and incentives will be needed in the highest-emitting countries like the US and China before these sustainable alternatives become mainstream.

Recent developments in the uses of green hydrogen suggest the gas could be used for energy storage, potentially transforming the way industries use renewable energy.[lxii] To see the rollout of green hydrogen at a scale needed to meet global climate targets, the private sector must continue to drive global demand signals, with governments creating enabling environments, such as through the creation of a universal carbon market.

84%

of global energy was produced by burning fossil fuels in 2019.

Thomas Hobby, CEO, Yosemite Clean Energy speaking at a Global Demand Signals event during New York Climate Week

"We can take the carbon out of flying through sustainable aviation fuels, protecting the amazing benefits international travel brings and improving air quality around airports at the same time."

- John Holland-Kaye,
CEO, Heathrow Airport

Game-changer No. 2: Sustainable Aviation Fuels

To break the reliance on fossil fuels, another game-changing sustainable innovation to explore is the use of SAF. The aviation sector is on track to consume up to one-sixth of the remaining carbon budget required to limit global warming to 1.5-degrees by 2050.[lxiii] To tackle emissions in the aviation sector, 2022 saw an increase in businesses making commitments to purchase, use and produce SAF.

To fulfil the International Air Transport Association's (IATA's) net zero by 2050 commitment, annual SAF production capacity will need to increase from 125 million litres per year to 449 billion litres per year. The market for SAF needs significant stimulation on the production side.[lxiv] Effective government incentives and subsidies will send a clear signal to the market that SAF will play a long-term role in the decarbonisation of the industry and encouraging further investment. In 2022, the Royal Air Force completed the first 100% sustainable aviation fuelled flight using a military aircraft. This progress was facilitated through the SMI Aviation Task Force, which is partnered with the WEF Clean Skies group.

Annual SAF production capacity will need to increase from 125 million litres per year to 449 billion litres per year.

To read more on the Royal Air Force's developments in SAF, click here

Game-changer No. 3: Carbon pricing/offsetting

As nations decarbonise at a rate much slower than recommended by the UN to fulfil the Paris goal, it is critical the world adopts carbon markets to curb the trend. The 'polluters pay' principle is gaining popularity as a fair and proportional way to finance the net-zero transition. Putting a price on carbon is nothing new as many nations and municipalities have implemented versions of carbon markets in the past. As of 2021, the World Bank estimated that there are no fewer than 68 implementations of carbon markets across the world representing US$84 billion in annual revenue – an encouraging 60% increase in revenue from the previous year.[lxv] The revenue produced by these schemes is crucial for funding sustainable development investments across the world. The current global average price for carbon is too low to finance the transition needed, at about US$28/ton. A price of at least US$100/ton is considered the baseline necessary to fund the sustainable development needed to achieve net zero.[lxvi]

Game-changer No. 4: Sustainable transportation methods

With almost 60% of the global population living in cities, rethinking modes of urban transportation is vital to reduce carbon emission. Some popular solutions are electric buses, metros and trains that do not emit carbon or local air pollution. By encouraging environmentally friendly public transportation, cities are increasingly deprioritising personal cars. Paris and London are two cities championing this idea, with the former increasingly limiting private motor access to the city centre and the latter creating an Ultra-Low Emission Zone where particularly polluting vehicles are required to pay a fee to drive into the city.

Brandon Nelson, General Counsel and Corporate Secretary, JetBlue, speaking at the SMI SAF Spotlight Session during New York Climate Week

How has the SMI made an impact on Article 5 in 2022?

SMI companies are driving global demand signals in SAF

The widespread implementation and adoption of game-changing technologies is reliant on businesses and governments investing in these technologies and helping to influence global demand, moving the economy away from carbon-intensive technologies and operations. Two examples are in the areas of electric vehicles and SAF. SMI companies with a combined revenue of US$723 billion have made various commitments to support SAF demand, such as through the purchase of SAF offsets, thus increasing global demand, and reducing demand for traditional unsustainable aviation fuels.

SMI companies with a combined revenue of US$955 billion have made commitments related to electric vehicles, ranging from purchasing electric vehicles as part of their fleets to supporting employees in the purchase of electric vehicles, thus reducing global demand for internal combustion engine vehicles, and increasing demand for electric vehicles.

Karen Fang, Global Head of Sustainable Finance, Bank of America speaking at the SMI SAF Spotlight Session during New York Climate Week

Bob Moritz, Global Chairman, PwC, moderating the Fashion Task Force panel at the Terra Carta Action Forum at COP27

The SMI Fashion Task Force released its manifesto for regenerative fashion

Due to its size and potential to be based on sustainable, bio-based solutions, the fashion industry can become a defining example of how to transition big business towards a nature-positive circular bioeconomy. Through their Manifesto for Regenerative Fashion, the SMI Fashion Task Force commits to changing the path of the fashion industry towards the creation of a more regenerative industry.

Regenerative fashion is about holistically addressing the climate and biodiversity crisis while generating equitable and inclusive prosperity along its value chains. At the same time, it sets out to support the local and indigenous communities responsible for creating regenerative landscapes. In its search for wisdom, beauty and spirituality, regenerative fashion aims to reconcile science, innovation and local traditions.

The manifesto answers **Article 5**'s call to action to explore game-changing technology and methods of production to accelerate sustainable progress.

To read the full report of recommendations and see the companies involved, click here

The SMI Sustainable Buildings Task Force released a white paper focused on accelerating the decarbonisation of the built environment

Since buildings contribute to 39% of CO_2 emissions globally, urgent action is needed to decarbonise the built environment at all levels – by governments, businesses, and individuals.[lxvii] The technologies needed to reduce a building's carbon emissions are available now. Yet, there is still much that needs to be done to help businesses accelerate deployment of these solutions, including policies that incentivise the adoption of proven technologies, coordinated global partnerships, and tools that enable the private sector to effectively use available incentives.

In 2022, the Sustainable Buildings Task Force produced a white paper to deliver recommendations for accelerating action to decarbonise the built environment.

The Task Force believes that global partnerships are key to providing an environment for the private sector to accelerate its action towards building decarbonisation. With regard to partnerships, the Task Force recommends three areas of focus:

- Global promotion of partnership and incentive models that have already proven successful to accelerate decarbonisation in the built environment so businesses can learn about and adopt them.
- Global campaigns with consumers in mind so the carbon impact of the buildings we all live in, work in or visit is transparent and readily understood.
- Development and dissemination of a Global Legislation Mapping Tool that provides regulatory frameworks, standards and reporting from across the globe, so the private sector has the information they need to accelerate action.

To read the full report and see the companies involved, click here

"Increasing the sustainability of the global building stock is a significant lever to achieving net zero; our SMI Task Force white paper sets out the technologies, partnerships and sound policy enablers that will support decarbonisation."

- George Oliver,
Chairman and CEO, Johnson Controls International

George Oliver, Chairman and CEO, Johnson Controls International speaking on a panel at Terra Carta Action Forum at COP27

The SMI Sustainable Batteries Task Force is creating a battery passport

Batteries are material- and resource-intensive and often associated with a number of ESG impacts. Led by the Global Battery Alliance (GBA), the Sustainable Batteries Task Force convenes around 120 members spanning the tech, automotive, software, mining, and manufacturing sectors.

The Sustainable Batteries Task Force is developing a digital representation of a physical battery with critical information on battery chemistry, manufacturing history, provenance, and ESG performance across approximately 30 parameters. This will result in a quality seal based on trusted and credible data that can be shared to build greater transparency for decision-making by industry, public stakeholders, and consumers.

Using this information, they will be able to identify batteries that are best and worst in class and provide minimum acceptable standards for a sustainable battery. Ultimately, this work will contribute to providing consumers with a measure of comparison based on the sustainability performance of batteries and drive improvement throughout the value chain. The importance of the passport has already been endorsed at the 2021 G7 Leaders' Meeting, the draft EU Directive on Batteries and by the Canadian and US administrations. This aligns well to the fifth theme of **Article 5**, which calls for the implementation of sustainability solutions at scale in partnership with governments and the private sector.

Spotlight on: Lloyd's insurer Ascot and broker Marsh

Lloyd's insurer Ascot announced the launch of a Marine Cargo and War facility that will provide coverage for vital grain and food products transitioning through safe corridors established by the newly signed Black Sea Treaty between Russia and Ukraine.

Placed by Marsh and led by Ascot, the Lloyd's facility will provide up to US$50 million in all risks for marine cargo and war coverage. The facility will allow ships transporting grain and other designated food products from Ukrainian ports to have reliable and readily available coverage in place for their export voyages. It is a clear implementation of the first theme of Article 5, which calls for working at a global level to identify and communicate barriers to acceleration.

Patrick Tiernan, Chief of Markets at Lloyd's, said on the matter "The recovery of these grain supplies is vital to addressing global food insecurity and market uncertainty at this difficult time. The facility announced by our market … is of paramount importance. It will add essential protections to the deal brokered by the UN … and represents the latest support from Lloyd's and the insurance industry to help the international community respond to the conflict."

To read the full press release, **click here**

Spotlight on: Zero Emission Livestock Project

Agriculture is the largest human-caused source of methane emissions into the atmosphere, with the majority of those coming from livestock agriculture. As more countries continue to build wealth, their beef consumption rises. Every day, 1.6 billion cattle each exhale 400 litres of methane.[lxviii]

The Zero Emission Livestock Project (ZELP) has designed a wearable device for cattle to neutralise methane emissions in real time. The device is a harness that fits comfortably on the animal to convert the methane using a chemical catalyst. ZELP's product has the potential to play a significant role in agricultural methane reductions through the emissions offsetting markets. The SMI Terra Carta Design Lab has awarded ZELP for its innovative thinking to curb global cattle emissions.

Spotlight on: Lanzatech

Lanzatech is able to collect large quantities of pollution such as industrial waste and CO_2 and transform it into useable products such as textiles, sustainable fuels, and cosmetics. Lanzatech's work aligns strongly with the **Article 5** principle of scaling up carbon capture, use and storage. Several plants already use Lanzatech technology with fashion brands such as Zara and Lululemon already using building blocks made by Lanzatech to make their products. Lanzatech aims to have set up 20 plants by 2024; therefore, the business now has more than 10 new plants either under construction or in the design phase.[lxix]

Jennifer Holmgren, CEO, Lanzatech, speaking on a panel on SAF at Terra Carta Action Forum at COP27

To read more about Lanzatech, click here

Focus areas for 2023 and beyond

Meeting global climate targets and undergoing a just transition will require businesses, governments and industries to invest in and accelerate the development of game-changing technologies and innovations, whilst breaking down barriers to progress. **Article 5** recognises this and calls upon the private sector to create an enabling environment for these game changers and work to eradicate any barriers blocking positive change.

Actions to be undertaken by businesses and industries:

1. Work at a global, cross-industry level to remove barriers to accelerate and implement game-changing opportunities.
2. Explore the potential and application of game-changing economic and financial incentives such as carbon pricing, carbon offsetting, subsidies, and lending practices, along with the 'polluter pays' principle.
3. Work towards breaking the reliance on fossil fuels and to enhance clean energy and sustainable market readiness.
4. Invest in game-changing innovations in the areas of greatest transition opportunity to demonstrate to the world what is possible for Nature, People & Planet.
5. Develop the business, financial and investment cases to enable projects viability and implement sustainability solutions at scale in partnership with international, regional, national, and municipal governments.
6. Focus on the creation of transparent and impact-focused carbon markets that are linked to a common measurement framework. These markets should direct offsets into Nature-based, technology-based, and engineered transition solutions in support of emission reduction or carbon capture and biodiversity restoration.
7. Scale mechanisms and technologies that can draw down the carbon legacy, by scaling up research, innovation, and investment into carbon capture, use and storage.
8. Scale renewable and bio-based solutions to move from a linear industrial system to a circular one.
9. Create global sustainable labelling and warranting to rapidly drive consumer demand for sustainable products and services.
10. Consider exploring game-changing sustainable innovations and investments in areas such as:

- Sustainable transportation methods
- Biomimicry
- Advanced biofuels
- Sustainable aviation fuels
- Green hydrogen
- Renewable energy storage including batteries
- Electric flight propulsion
- Nuclear fusion
- Retrofitting buildings for higher energy efficiency
- Carbon-neutral construction and infrastructure (e.g., greening steel and cement and exploring bio-based alternatives)
- Soil regeneration for enhanced carbon capture
- Natural Capital resource monitoring, including by satellite
- Green infrastructure (e.g., electric charging station networks, aviation, and shipping infrastructure)

ARTICLE 6

Sustainable Investing at Scale

Introduction

In **Article 6 – Sustainable Investing at Scale**, the private sector is called upon to provide better access to capital to enable a green transition, through significant investment in sustainable projects. On every pressing issue facing businesses as they transition, there are solutions that are not just available, but increasingly cost-effective. In addition to this, there are trillions of dollars in sovereign wealth funds, pension funds, insurance, and asset portfolios that could be invested in sustainable projects with good long-term value and rates of return, pivoting away from activities not promoting a low-carbon future. Much of the focus of **Article 6** is on developing solutions to bring projects together with financers and investors and encouraging sustainable investing through the removal of barriers and the mobilisation of finance.

There is an urgent need for scaling sustainable investing

Across the economy, the availability of financing is often a critical factor in determining which projects and initiatives planned by private sector businesses move ahead and which do not. There are two broad dimensions to sustainable investing at scale:

- Asset managers and asset owners committing to invest strategically in businesses making the transformation towards greener operations.
- Developing new sources of funding for sustainable activities.

The latter of these not only requires showcasing high-potential investments, but also reimagining mandates, financial analysis, structuring and models of return, whilst considering elements such as investor risk and regulatory impact. Recognising the extensive capital needed to make the sustainable transition, the transition to a sustainable private sector and economy is heavily reliant on asset managers and asset owners creating a seismic shift of capital flows from unsustainable projects and businesses to those aligned with a sustainable future. **Article 6** highlights the need for the financial sector to allow the appropriate financing to be readily accessible and scale up sustainable investing, and calls for the private sector to work together to develop and share the mechanisms to enable this change.

Chief Sustainability Officers speaking on a panel at Terra Carta Action Forum at COP27

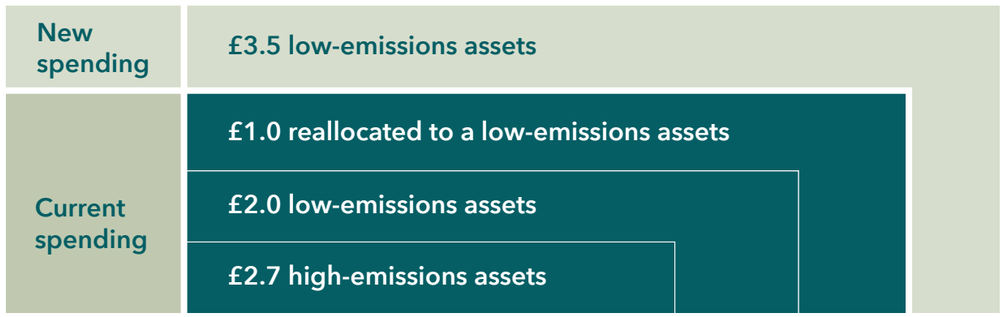
Global Picture

Portfolios are shifting towards becoming more sustainable, but more action is needed

Investors are now recognising the need for sustainability to be a key consideration and are actively seeking out environmentally positive projects and businesses in which to invest. 22% of investors state that "all or most of their portfolio incorporates ESG." When previously surveyed in 2019, not a single respondent said their business incorporated ESG into all their investments, demonstrating how sustainability and ESG issues have been increasingly brought into focus over the past few years. The improvement of climate policy in many regions across the globe has led to increased transparency of business practices and their impacts on the environment, leading to the erosion of barriers to sustainable investing and true ESG integration.[lxx]

Even though the past decade has seen an incredible surge in ESG capital, experts agree much more is needed to meet ambitious global agreements such as the Paris Agreement. In the beginning of 2022, McKinsey and Company reported that achieving net zero by 2050 would require an extra US$3.5 trillion a year in capital spending, estimating that capital spending on physical assets for energy and land-use systems during the transition will amount to roughly US$275 trillion, or US$9.2 trillion each year on average.[lxxi] At the current pace, the path towards full ESG integration across the investment sector is still many years away.

Average annual spending on energy, mobility, industry, buildings, agriculture, forestry, and other land use, 2021-50, £ trillion.



Source: The net-zero transition

Most sustainable investments are currently aimed at developed markets

Countries in the Global South are most at risk from the potentially devastating impacts of climate change, although most sustainable investments are aimed at developed markets and are, therefore, not addressing the most pressing social and environmental issues in developing markets.[lxxii] The OECD estimates the Sustainable Development Goal financing gap in these countries has risen from US$2.5 trillion to US$4.2 trillion.[lxxiii] One of the contributors for the lack of investment in developing markets is the quality of data available to monitor investments. Data is generally harder to come by in these markets (in part due to the recent increased ease of obtaining data in some developed countries thanks to increased regulation on sustainability reporting), and so, making investment decisions can be more costly and take longer due to the need for increased due diligence processes.[lxxiv]

The ongoing debate of divestment versus engagement continues

Around the world, a range of activist movements are seen calling for divestment from business carrying out unsustainable business practices. However, this approach could prevent unsustainable businesses from embarking on their green transition, as they may need access to financing to kick-start this journey. As such, other investors are choosing to harness their power as shareholders and financers to challenge businesses on their sustainability strategies and ensure their operations are pivoting to become more sustainable, without swiftly removing the financing they need to begin this journey.[lxxv] Across all businesses, and the financial sector, significant upskilling is required so that staff at all levels involved in this type of decision making feel equipped and empowered to bring sustainability into the centre of decision and deal making.

> **"The future doesn't necessarily need to look like the past. You have a new type of actor in the market: institutional investors who are looking at investment opportunities in emerging markets through a climate finance lens who want to ensure that their capital provides for a constructive path forward."**
>
> **- Marc-André Blanchard,**
> Executive Vice-President, Head of CDPQ Global and Global Head of Sustainability, CDPQ

Transparency of sustainability-related impacts is ever improving

Improved policy requirements, such as the widely adopted requirement for businesses to report in line with the TCFD framework, have led to increased transparency and understanding of businesses' sustainability impacts across the economy. As a result, investors now have access to better information on the impact of the businesses they are investing in, making it easier for sustainability to become a key component of the investment decision-making progress. This significant global shift towards ESG reporting becoming the norm is instrumental in removing the barriers between sustainable projects needing financing and the financing itself, helping to accelerate innovation and businesses' green transitions. If the private market continues to improve its transparency through ESG-related disclosures using transparent frameworks for measuring impact, and if regulators demand further transparency and reporting, sustainability considerations may become as crucial in investment decision-making as traditional financial considerations.[lxxvi]

Businesses are beginning to launch green finance products

Many businesses and financial services firms are opting to release green finance products to raise capital for environmentally positive products. Examples of these are green mortgages, where homebuyers receive better mortgage rates on housing with a better energy efficiency rating, and green loans, where banks offer better borrowing terms to businesses looking to fund a green transition project. This benefits businesses looking to undergo a green transition as they receive cheaper financing, whilst finance providers generally benefit from the lower risk profile often associated with climate and environmentally positive projects.

One example of a green finance project is PepsiCo's recent issuance of its second green bond, with a face value of US$1.25 billion, which includes the adoption of regenerative agriculture across key ingredient footprints.[lxxvii]

Individuals can engage with sustainable investing through their pensions

Whilst it is key that investors and the investment industry focus on scaling sustainable investing, individuals across the economy can also have an impact through the key investment instrument that affects individuals across the whole economy – pensions. Many people do not engage with their pensions until retirement and lack knowledge as to where their funds are being invested. It is estimated that switching a pension into a sustainable fund could be up to twenty-one times more effective at cutting carbon than stopping flying, becoming vegetarian and switching to a sustainable energy supplier combined.[lxxviii] The UK-based Make My Money Matter campaign, co-founded by film writer and director Richard Curtis, believes it is important that where individuals' money is invested should complement their environmental actions, rather than undermining them.[lxxix] This highlights how these lifestyle actions are still important in tackling climate change, whilst emphasising the massive impact that pivoting pension investments can have and is yet another example highlighting how everyone across the economy has a role to play in combatting climate change.

US$275tn

in capital spending on physical assets for energy and land-use systems is required globally to reach net zero by 2050.[lxxi]

21%

of investors stated that sustainability is either central to almost everything they do, or an absolute necessity in everything they do in 2021.[lxx]

47%

of investors believe that sustainability will be central to almost everything they do, or an absolute necessity in everything they do in 2023.[lxx]

How has the SMI made an impact on Article 6 in 2022?

SMI companies are committing to drive global demand for low-carbon hydrogen

Investment in new technologies is key to driving the transition and will play a critical role in meeting ambitious global targets to halt climate change. This is especially true in the energy sector, where new, clean technologies must be developed to allow for the mass rollout and expansion of renewable energy needed across the planet, and to significantly reduce reliance on fossil fuels and non-renewable energy sources.

At the time of launch of the hydrogen H_2Zero pledge at COP26 in November 2021, the combined supply impacts of the initial 28 global signatories totalled 18 million tonnes per year of lower-carbon hydrogen landing in global markets.[lxxx] Yet around 75 million tonnes of hydrogen are needed per year across various industries, in processes related to chemicals manufacturing, refineries and steel. This highlights how much more investment is needed, with the requirement for mass investment in the clean hydrogen supply chain being estimated at five trillion US dollars by a Goldman Sachs report.[lxxxi]

In 2022, SMI companies with a combined revenue of more than US$600 billion have signed up to the H_2Zero Pledge, pledging to consume, supply and/or support low- or zero-carbon hydrogen with the lowest possible carbon intensity for all functions of their business' needs by 2030, helping to support the scaling of this technology.

The SMI Asset Manager and Asset Owner Task Force released a report on accelerating transition structures

Despite the growing supply of capital for sustainable investing globally, persistent barriers remain to financing projects, technologies, and businesses that are critical to achieving a full and responsible transition to a net-zero and nature-positive future. The first objective of **Article 6** of the Terra Carta regards furthering collaboration among investors and asset owners who can mobilise capital needed for sustainable investment. Convened under the SMI Asset Manager and Asset Owner Task Force, the Transition Finance Working Group has codified a set of findings and recommendations to accelerate the flow of capital, at scale, towards viable transition finance structures.

The recommendations (see table below) were informed by a review of transition finance structures across sectors, technologies, geographies, and degrees of success. Despite the wide range of viable transition finance structures, this group has defined the hallmarks for achieving scale and impact as including a credible and inclusive transition definition, a supportive enabling and policy environment, and appropriate levels of blended finance and investment de-risking.

To read more about the recommendations towards viable transition finance structures, click here

	Transition Finance Aims	Recommendations
1	Develop and launch credible and scalable transition finance products.	Seek to replicate and scale functioning finance structures and prioritise transition pathways.
2	Attract capital into credible transition finance products.	Clear glidepath, illustration of risk-return profiles for investor attracting, recognise long-term repetition possibilities in funding institutions.
3	Commit capital to transition finance.	Senior leadership level strategic direction on transition finance.
4	Commit to supporting industry best practices for transition finance, and communicating progress with stakeholders.	Industry working groups, best practice sharing, utilisation of common frameworks, acknowledging the importance of transition pathway understanding.
5	Strengthen enabling environment for transition activities.	Strong coordination across agencies and national regulators, just transition.
6	Invest in activities that can increase speed-to-market of scalable transition finance funds.	National platforms for financial institutions, enable strategical alignment or communication on transition finance priorities.
7	Clarify the regulatory environment for transition finance.	Support and funding for transition through subsidies and tax schemes to support long-term decision-making.
8	Expand active measures to fund transition activities.	Ensure regulatory capacity in project host countries, expanding the use of Green Banks to fund capital-intensive transition technologies with private capital.

To read the full report of recommendations, click here

Source: SMI Asset Manager & Asset Owner Taskforce, Viable Transition Finance Structures.

The Natural Capital Investment Alliance continued work towards its commitment of mobilising US$10 billion of capital towards Natural Capital assets

To scale and mobilise investments in support of nature, **Article 6 – Sustainable Investing at Scale** called for the creation of a Natural Capital Investment Alliance (NCIA). The NCIA aims to attract members from the finance community to create scale and synergies between mainstream asset owners and asset managers, underpinned by the following goals:

- To serve as a central hub for global businesses and financial institutions seeking to scale up their investments into Natural Capital, in support of biodiversity restoration, including through high integrity carbon offsets.
- To share investment knowledge and expertise on investing in Natural Capital, underpinned by strong principles.
- To showcase and demonstrate scalability of appropriate investment vehicles and the multiple opportunities across asset classes.

Chaired by Pollination, the NCIA currently has 15 members, spanning large, institutional asset managers, businesses with dedicated Natural Capital funds and/or strategies, and boutique Natural Capital investors. The NCIA is currently working on accelerating its impact on Natural Capital investing through two key workstreams: one focused on policy and external engagement, and the other on metrics and disclosures. Notably, the former workstream produced recommendations for policy changes that would help to scale investment in nature ahead of COP27.

The NCIA's Policy working group identified four high-impact areas of focus for the COP15 policy makers:

1. **Make it Mandatory**
   Mandatory disclosure around core areas of nature loss, like water use, deforestation, waste and emissions as well as annual targets for the same.

2. **Conservation Investment**
   Including the 30 x 30 initiative, spend targeted on IUCN red list, protecting species at risk and ensuring adequate annual funding at the state and federal level.

3. **Remodel subsidies**
   Re-point subsidies to more sustainable activities and biodiversity-friendly practices, and reduce/eliminate poorly targeted and distortionary subsidies, along with relevant KPIs.

"The intersection of Nature and investment is never more critical than today and with that there are opportunities to further increase the scale of Natural Capital investment and the positive outcomes that will translate for future generations."

- Tony O'Sullivan,
Chair, Natural Capital Investment Alliance (NCIA) and Founder and Chair, Pollination, speaking at COP15

4. **Alignment of financial flows**
   Align funding to biodiversity goals and targets with examples of effective mechanisms (lower interest payments / blue debt, etc.).

Having built consensus on the priorities, it became apparent that these points aligned very materially with the position put forward by the collaboration of the United Nations Environment Programme Finance Initiative (UNEP-FI), Principles for Responsible Investment (PRI) and Finance for Biodiversity. Subsequently, NCIA members elected to support that position individually to reinforce the collective impact.

Looking ahead, the NCIA will further explore possibilities to attract and get support from other private sector operators and aims to become experts on biodiversity and Natural Capital metrics within the Sustainable Markets Initiative, enabling the NCIA to support other Task Forces with their biodiversity-related metrics and strategies.

At COP26 in November 2021, the NCIA announced a commitment to mobilise at least US$10 billion in investment into Natural Capital assets in 2022, with an ambition to scale that investment in the coming years.

In September 2022, the NCIA held its inaugural annual Investment Summit. This event convened over 70 professionals working in the investment and Natural Capital sectors, including representatives from UNEP-FI and the UK Department for Environment, Food and Rural Affairs (DEFRA), to discuss solutions for scaling investment in Natural Capital.

The inaugural Natural Capital Investment Summit was held in October and brought together over 85 practitioners across the market to discuss pertinent aspects of Natural Capital funding, pricing and transparency via technology. Key takeaways have formed the basis of the NCIA's strategic and operational planning being undertaken by the newly appointed Chair.

NCIA's Nature Investment Summit on 18th October 2022

The SMI Hydrogen Task Force is supporting growth in the demand for, and supply of, hydrogen

Answering the call of **Article 6** to scale up investment in sustainable infrastructure to accelerate the sustainable green economy, the SMI collaborated with The World Business Council for Sustainable Development to drive growth in the demand for, and supply of, hydrogen. These businesses represent different sectors from mining to energy, vehicle and equipment manufacturers and financial services. The partnership created the H_2Zero hydrogen pledge, in which businesses make a pledge to supply, support or add to demand for low-carbon intensity hydrogen.

The Hydrogen Council estimates that in 2030, the decarbonisation potential for hydrogen could equate to approximately 800 million tonnes per annum (mtpa) of CO_2 emissions avoided.[lxxxii] The H_2Zero hydrogen pledges announced already equate to nearly one quarter of this total.

On the demand side, the H_2Zero hydrogen pledges, which total 1.6 mtpa of lower-carbon intensity hydrogen, focus on replacing grey hydrogen, currently used widely in the refining, chemical and fertiliser sectors, or diesel fuel used in heavy industries such as mining. This would reduce carbon dioxide emissions by more than 14 million tonnes a year – the equivalent to the annual emissions of more than six million cars in Europe.

On the supply side, the H_2Zero hydrogen pledges add up to more than 18 mtpa of lower-carbon hydrogen. This would avoid about 190 million tonnes a year of CO_2 emissions, if it replaces grey hydrogen, natural gas for industrial heat and petroleum fuels in transportation. This would be the equivalent of nearly the combined annual emissions of The Netherlands and Tunisia.

Transforming the global energy system will require unprecedented collaboration between the private and public sectors. Policymakers are required to create a stable investment framework that will accelerate the deployment of clean hydrogen, creating numerous opportunities for employment and economic development.

To read more about H_2Zero hydrogen pledges, **click here**

"The uncertainty over supply and the lack of commitment for demand are two challenges associated with the development of hydrogen as part of the global energy system. We brought companies together to tackle this status quo and send a strong signal to markets and governments for hydrogen to reach its full potential."

- Ben van Beurden,
Shell and 2022 Chair, SMI Hydrogen Task Force

The SMI Asset Manager and Asset Owner Task Force launched a framework for defining transition categories for investors

The SMI Asset Manager and Asset Owner Task Force has produced a framework for transition categorisation to enable the continuing investment into sectors and regions that are critical to the net-zero transition. The aim is to avoid indiscriminate funding, ensuring the transition is orderly and remains just, while increasing the resilience of investor portfolios to the shocks experienced in ever-fluctuating markets.

90% of the world's economy is committed to the net-zero transition predicted to cost upward of four trillion US dollars annually by 2050. Most of the finance needed to reach net zero will be in high-carbon sectors and emerging markets. Four of these sectors – power, mobility, industry, buildings - are responsible for 85% of global emissions, with emerging markets on track to produce 90% of new emissions by 2030. Investing in the transition means investing in carbon-intensive businesses that have credible transition plans or that supply materials or products that enable the transition to net zero.

For **Article 6** to be realised in full, investment frameworks, such as this one, are crucial for cross-sector alignment and targeted decisions where investments are needed most urgently.

The SMI Asset Manager and Asset Owner Task Force also published a set of actionable recommendations for asset managers, asset owners, Multilateral Development Banks, Development Finance Institutions, and policymakers on how to accelerate the flow of capital, at scale, towards viable and credible transition structures. These recommendations call for a credible and inclusive transition definition, a supportive enabling and policy environment and appropriate levels of blended finance and investment de-risking.[lxxxiii]

Minimum standard for all transition assets:

Net Zero commitment | Capex and Opex allocation to Net Zero | Transition plan | Carbon intensity reduction targets

Aligned Transition

Transitioning	Committed to Transition	Transition Enabler	Interim to Phase-Out	Aiming to Transition
Asset has a Paris-aligned pathway (target and plan) or is likely to transition due to sectorial or regional decarbonisation and contributes significantly to carbon mitigation through its output. Asset's emission intensity may be close to or near net zero.	Asset is committed to net zero and is likely contributing to carbon mitigation but requires significant transition investment to scale low carbon technology, and or to pivot business model to achieve a Paris-aligned pathway.	Asset is required to enable the transition to net zero for other sectors and may not have a Paris-aligned pathway. Asset is committed to net zero.	Asset currently needed but should be phased out in line with a Paris-aligned pathway by latest 2050. Asset with phase-out time line that makes it Paris aligned. Asset cannot be aligned without accelerated phase-out.	Asset is committed to net zero and is taking action to reduce emissions AND is ahead of its peer group- but has no clear pathway to net zero.

Spotlight on: Linde plc

Linde plc is an example of a business investing significantly in decarbonisation. The business is planning to invest more than US$1 billion in decarbonisation initiatives and triple the amount of clean hydrogen the business produces by 2028, pursuing low-carbon sources of hydrogen, such as from energy-efficient steam methane reformers with carbon capture, electrolysis with renewable power, and pilots of new low-carbon technologies.[lxxxiv]

Source: Linde.com

Focus areas for 2023 and beyond

To move towards a more sustainable economy and reach net zero, significant investment is required and capital must be allocated towards sustainable businesses and technologies on a seismic scale. **Article 6** calls upon the private sector to collaborate to create the enabling environment for this investment and actively support the reallocation of capital towards sustainable businesses and projects.

Actions to be undertaken by industries:

1. Further collaboration between investors and asset owners, which can mobilise the trillions of dollars needed to put the global economy on a sustainable trajectory.
2. Develop transition investment strategies that will outline steps to align investment portfolios towards Natural Capital improvement.
3. Scale up new investment in sustainable infrastructure and shift portfolio allocation to sustainable infrastructure projects to accelerate the sustainable green economy.
4. Continue to develop the private sector-focused Natural Capital Investment Alliance to further impact-oriented Natural Capital funds.
5. Update financial analysis to incorporate the risks and opportunities of the climate transition. In parallel, revaluate investments criteria to provide funding to sustainability-driven projects.
6. Establish an open investment platform to connect large-scale, sustainability-focused investment opportunities with large-scale, long-term investment.

Actions to be undertaken by businesses:

7. Explore the adoption of the Institutional Investors Group on Climate Change's (IIGCC's) Net-Zero Investment framework.
8. Develop product offerings to incentivise sustainable investment in line with net-zero investment strategies.
9. Allocate capital to fund assets and businesses delivering the technology, infrastructure and activities needed to achieve biodiversity restoration.
10. Define the benefits derived from the Natural world and accounting for alignment to net zero and the value of Natural Capital on company balance sheets.
11. Examine and revise mandates of institutional investors and asset owners in line with Nature-positive targets.

ARTICLE 7

Nature, the True Engine of Our Economy

Introduction

When thinking of business and the benefits derived from the natural world, respect for Natural Capital – defined by the United Nations as the extension of the economic notion of produced capital to the natural environment - must be maintained and protected.[lxxxv] The need to repair and regenerate our environment is greater than ever. New ways must be created to direct more investments to nature and regenerative actions and build financial tools to support this development. Land sector and its transition could contribute an estimated 30% of the global mitigation needed by 2050 to deliver the 1.5-degrees target.[lxxxvi] To protect land, Nature-based solutions should be explored and leveraged to support productive and resilient agriculture while avoiding the pitfalls of land degradation.

Article 7 – Nature, the True Engine of Our Economy calls for regenerative and innovative action in securing Natural Capital. Businesses must be aware of their impact on Nature and the extent of the damage their operations are causing.

Article 7 calls out for action to regenerate and secure Natural Capital

Natural Capital underpins so much of humanity's economic prosperity and wellbeing, but nature's finite resources are being depleted faster than they can recover. Additionally, while some natural resources like timber can naturally replenish with time, species most critically cannot recover once they are gone. **Article 7 – Nature, the True Engine of Our Economy** calls upon private sector businesses and governments to work together to protect and restore nature, working towards more sustainable usage and maintenance of Natural Capital, including land, biodiversity, and ecosystems. Businesses should acknowledge their own impact on nature and Natural Capital and work to improve this.

Global Picture

Nature is at a crisis point

Nature underpins human livelihoods, prosperity, and wellbeing. Research performed by the World Economic Forum and PwC shows that US$44 trillion of economic value generation – more than half of the world's total GDP – is moderately or highly dependent on nature and its services and is, therefore, exposed to risks associated with nature loss.[lxxxvii]

Despite the economy's significant reliance on nature, human activity is degrading it at an unprecedented rate and scale. Since 1970, the rate of human extraction of natural resources has outstripped the Earth's rate of regeneration, and to maintain the world's current living standards with the current economic systems would require an estimated 1.7 Earths.[lxxxviii]

In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) published a global assessment of biodiversity and nature. This assessment found that three-quarters of the land and two-thirds of the marine environment have been significantly altered by human actions. Half of the world's forests, half of the world's coral reefs and 85% of wetlands have been lost. Additionally, population sizes of mammals, birds, fish, amphibians, and reptiles have reduced on average by 68% since 1970.[lxxxix]

As outlined in the World Wildlife Fund (WWF) Living Planet Report 2022, land-use change is currently the biggest threat to nature, destroying or fragmenting the natural habitats of many plant and animal species both in freshwater and in the sea. The report also states that, if global warming is not limited to 1.5-degrees, climate change is likely to become the dominant cause of biodiversity loss in the coming decades.[xc] This threatens to worsen the existing inequality that climate impacts have to those who will suffer most with the loss of nature. Groups who have the least impact on climate change are increasingly impacted the most by its consequences.

US$44tn
of economic value generation is moderately or highly dependent on Nature and its services.

> **"...the discussion on biodiversity and how to scale more innovative solutions is key to building momentum for more Nature-based opportunities. There are a number of existing proven technologies that can dramatically reduce waste and carbon emissions and it's our job to bring them to scale."**
>
> **- Trevor Neilson,**
> Co-Founder, CEO and Chairman, WasteFuel, speaking at COP15

To maintain the world's current living standards with the current economic systems would require an estimated 1.7 Earths.

Delegates at the Nature Investment Summit on 18th October 2022

Investment in biodiversity and nature needs to increase

The private sector has a key role to play not only in ensuring operations and business practices do not harm the natural world, but also in reorientating capital towards nature-positive solutions. In 2019, research found that there is an annual investment need of between US$722-967 billion to halt the decline in biodiversity between then and 2030.[xci] Investment needs to triple in real terms by 2030 and increase four-fold by 2050 if the world is to meet its climate change, biodiversity, and land degradation targets.[xcii]

Frameworks to help businesses understand their nature-related risks and opportunities are in development

In the past few years, nature and biodiversity loss has come into focus in many industries, as businesses seek to understand the potential associated risks and opportunities they face. Whilst there are various frameworks to aid businesses to understand and communicate their climate-related risks, there are fewer established tools to help businesses understand and act on their nature-related impacts and risks. The TNFD is currently producing a framework to aid businesses with assessing, understanding, and communicating their nature-related risks and opportunities. The widespread adoption and usage of this framework would not only help businesses make better informed and nature-positive decisions but would also provide investors with the information needed to understand their investments impact to nature.

Nature-positive investment funds are on the rise

An ever-increasing number of asset managers are launching Natural Capital funds, channelling much-needed finance towards nature-positive investments and projects. One such example is the establishment of HSBC Pollination Climate Asset Management, which "aims to offer investors a wide exposure to global Natural Capital themes in both emerging and developed markets,"[xciii] whilst Lombard Odier has established Natural Capital strategy which "aims to invest in a circular bioeconomy that prospers through harnessing and preserving nature."[xciv]

There is not yet consensus on common biodiversity metrics and standards

Unlike measures of carbon, there is currently no single universal metric for understanding impacts to nature and biodiversity. The TNFD identified over 3000 potential metrics on nature, highlighting how challenging it is to quantify and understand.[xcv] As such, there is a lack of consensus across the economy on the nature-related metrics and targets that should be used by businesses. The setting of the Paris Agreement target of limiting global temperature rise acted as a "North star" to "streamline efforts to limit climate change," although an equivalent agreement does not yet exist for biodiversity. This makes it challenging for businesses to understand what constitutes "best practice" in the biodiversity space, potentially hampering progress and increasing greenwashing risks for businesses.[xcvi] Lastly, it is crucial that governments and businesses invite First Nations into these discussions, as they will bring a rich traditional knowledge rooted in thousands of years of living in harmony with nature.

Positive progress was made at the United Nations Biodiversity Conference (COP15) in December 2022, where nations agreed on 23 ambitious targets for 2030 to halt and reverse the destruction of Earth's ecosystems. Amongst these targets is an agreement to reduce harmful subsidies by at least US$500 billion by 2030 and a requirement for governments to ensure that large and transnational companies disclose "their risks, dependencies and impacts on biodiversity."

The need for agreement and convergence on universal metric is discussed in more depth in **Article 9 – Adopt Common Metrics and Standards.**

How has the SMI made an impact on Article 7 in 2022?

The Natural Capital Investment Alliance has mobilised finance towards Natural Capital

As detailed in **Article 6 – Sustainable Investing at Scale**, the 15 member companies of the NCIA have set out plans to launch a range of closed-ended and open-ended fund strategies with the collective target of mobilising US$10 billion towards Natural Capital themes by the end of 2022.

Over US$1.1 billion has been invested and a further US$6.2 billion is being raised to deploy across a diverse portfolio of companies and projects around the world, including listed and private entities and across the spectrum of Natural Capital types. The balance will be delivered in 2023 through further mobilisation and expansion of the NCIA's membership.

SMI companies are recognising nature as a key component of their approach to sustainability

In 2022 SMI companies with combined revenue in excess of US$1 trillion have made commitments to biodiversity, highlighting Nature as a key part of their sustainability approach, whilst recognising there is more to be done.

To read more about the NCIA and its membership, click here

The SMI Private Equity Task Force is publishing a report on how the sector can address the biodiversity crisis

Biodiversity is central to the wider climate debate, but to date has not received the attention it needs to avert a crisis. The private equity business model typically has a long-term perspective and the ability as well as expertise to execute transformational management. This positions private equity firms well to address the biodiversity crisis, and so the SMI Private Equity Task Force has produced a report outlining how biodiversity can be both value-accretive and risk-reducing when factored into a business plan and investment cycle. Case studies are used to illustrate these points, whilst the report also outlines practical next steps for private equity firms to take to become Nature-positive. This report will be made public in 2023.

Spotlight on: Desert Agricultural Transformation

Exploring regenerative agriculture and the repair of Natural Capital is a key action that must be taken towards the aims of **Article 7**. Professor Yi Zhijian and his team's technique for land and farming in deserts, called "desert soilisation", is a perfect example of such regenerative action. This technique transforms a desert surface into a mixture similar to soil and, once crops have rooted, the land becomes self-sustaining. The technique enables farmers to stay on their homeland and maintain a food supply for their family despite being threatened by desertification. The team is piloting the technique in China and, if they remain successful, the new technique could revolutionise and secure livelihoods in the most remote and poorest corners of the world.

To read more about Desert Agricultural Transformation, click here

Spotlight on: Marine Conservation Society

The Marine Conservation Society (MCS) is a UK based not-for-profit organisation working with businesses, governments, and communities to clean and protect the ocean since 1983. The MCS has long understood that seabed habitats are the engine-room of the ocean, providing vital habitat for fish and shellfish, food, coastal protection, ecosystem resilience and, increasingly importantly, potential for "blue carbon" storage.[xcvii]

Through decades of historic over-harvesting, the Dornoch Firth in northeastern Scotland was depleted over a century ago of native oysters, which can provide refuge and critical habitat for hundreds of other species. That is why in 2017, The Glenmorangie Company invited Marine Conservation Society and Heriot-Watt University together to create the Dornoch Environmental Enhancement Project (DEEP) to restore the once-thriving habitat of oysters and help improve water quality. In just a few short years, the project has led to the reintroduction of over 50,000 new oysters that are benefiting the local ecosystem and Scottish community.

To read more on the Marine Conservation Society, click here

Spotlight on: Ørsted and WWF

A pioneering new partnership between Ørsted and WWF has been formed, aiming to advance offshore wind deployment that enhances ocean biodiversity. The partnership plans to jointly identify, develop, and advocate for offshore wind deployment initiatives and approaches that not only are in balance with nature but also enhance biodiversity.

On the partnership, Mads Nipper, Group President and CEO of Ørsted said: "Governments accelerate the build-out of offshore wind energy to end their dependence on fossil fuels and power the world sustainably. If done in the right way, offshore wind projects can enhance ocean biodiversity, improving ocean health, and thereby address both the climate and biodiversity crises." He continues: "Addressing climate change and biodiversity loss together allows for a much-needed shift in the way governments, NGOs, and businesses work to solve these interrelated crises. Solutions must complement one another, not come at the expense of each other."

To read more on Ørsted and WWF's partnership, click here

Spotlight on: McCain Foods

McCain Foods have launched a Regenerative Agriculture Framework, which includes the principles, priority practices, and thresholds to capture farmers' progress on implementing Regenerative agriculture over time. Looking ahead, the business' focus is rolling this out across their global grower base and ensuring harmonisation across the industry on measurement, whilst also supporting growers in optimising the cost and benefits of the transition to Regenerative agriculture and exploring a diverse set of local financing solutions.

To read on McCain Food's Regenerative Agriculture Commitment, click here

Focus areas for 2023 and beyond

Nature truly underpins the global economy and human livelihoods, but it is currently in immense danger. **Article 7** calls upon the private sector to consider its impact on Nature and to take swift action to restore Natural Capital and invest in scaling Nature-based solutions.

Natural Capital considerations for businesses and industries

1. Respect, repair, and regenerate Natural Capital in areas of business and supply chain operations as well as in areas of greatest global need.

2. Build Natural Capital and Nature-based solutions into corporate asset bases, portfolios, and supply chains.

3. Articulate a value for Natural Capital while seeking to build business and economic solutions around the wealth that Nature affords. This includes exploring how to account for, and value, Natural Capital on companies' balance sheets.

Actions to be undertaken by businesses and industries for mobilising finance towards Natural Capital

4. Create the conditions to ensure investment flow towards preserving Nature:

- Champion and support the development of common metrics for measuring and reporting on Natural Capital-based investments.
- Bring to market more Natural Capital investment platforms.
- Use public funds and blending mechanisms to leverage more private sector finance into Nature.
- Create new and innovative finance models such as green/blue bonds for forests, reefs, mangroves, and landscapes.
- Drive regenerative agriculture with a core focus on soil carbon as well as ocean restoration as two recognised natural carbon sinks.
- Reinvigorate successful historical approaches to Natural Capital investing such as debt-for-Nature swaps and public-private-philanthropic partnerships for Nature.
- Target coordinated and trusted carbon offsetting funds to the recovery of Natural Capital and the reduction of carbon emissions.
- Pursue mega-projects such as the restoration of millions of hectares of degraded land including the restoration and preservation of the Great Barrier Reef, the Southeast Asian deltas, the Amazon, the Great Green Wall and AFR100.
- Establish markets for ecosystem services.
- Develop Natural Capital innovation hubs where the ideas and technological solutions of tomorrow will germinate and flourish.

5. Leverage private catalytic finance and a catalytic 'Sustainable Markets Initiative Natural Capital Fund' to:

- Create a multiplier effect. This means that every dollar of catalytic capital can be leveraged multiple times in order to derive a gross amount of investment.
- Enable commercial capital to flow to the Nature-based solutions opportunities.

Actions to be undertaken by businesses and industries relating to the scaling of Nature-based solutions

6. Explore the development of incentives and enabling mechanisms necessary to scale Natural Capital and Nature-based solutions, including the potential to link financing to corporate carbon offsetting and revenue from a carbon price.

7. Explore Nature-based solutions that foster species-rich systems over monocultures. These can support productive and resilient agriculture, agroforestry, forestry, and aquaculture, while avoiding the pitfalls of land degradation, resource depletion, pollution, and insect decline.

8. Explore regenerative agriculture, including practices such as reduced tillage and crop rotations to restore soil fertility, or using silvopastoral or agroforestry systems to promote biodiversity

ARTICLE 8

Create Market Incentives

Introduction

Aiming to enable an environment that attracts investment and incentivises action, **Article 8 – Create Market Incentives** stresses the role of regulation, policies, and financial incentives to have a wide-ranging impact on all industries at once. Specifically, this article introduces five actions to support development of green subsidies, ranging from the establishment of a carbon market to the improvement of lending practices and the education of industries on green incentives.

The power of incentives must not be underestimated when driving change

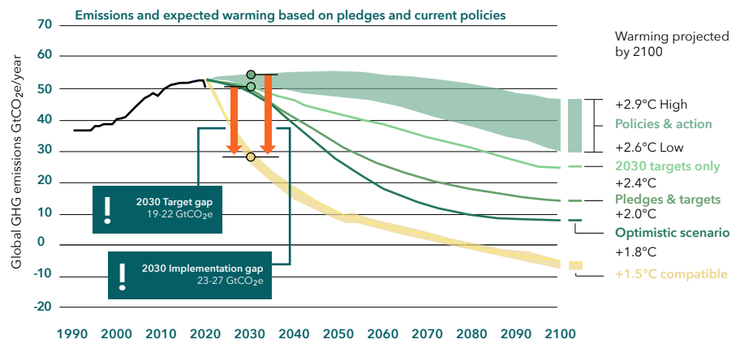
Incentives have the power of accelerating positive change, whilst also having the potential to slow movement due to perverse subsidies. These damaging subsidies can encourage the exploitation of fossil fuels, massive deforestation, unlimited exploitation of fisheries and disastrous agricultural practices. Incentivisation will be key in making progress on the majority of Terra Carta Articles. For example, to accelerate progress on **Article 1 – Create Sustainable Industries**, the private sector should be incentivised to adapt their business models and shift them towards becoming more sustainable.

Subsidies, policies, and regulations are key in creating the environment to deploy innovation and protect sustainable business models. Reversing damaging policies has the potential to transform the market by rapidly redirecting resources towards sustainable industries. To achieve maximum impact, there should be greater focus on reversing subsidies encouraging environmentally detrimental actions and accelerating the rollout and scaling of green economic subsidies, financial incentives, and regulations.[xcviii]

Article 8 – Create Market Incentives calls upon the private sector to improve understanding of carbon pricing and encourage policymakers to adopt a universal carbon price and associated carbon market, whilst developing recommendations for tackling perverse subsidies, lending, and investment, and replacing these with policies that could have a significant positive impact.

According to Climate Action Tracker's warming projections, the establishment of a global carbon market requires strong commitments to halving emissions by 2030, for the 1.5-degrees goal to remain within reach.[xcix]

2100 Warming Projections[xcix]



Global Picture

Worldwide spending on subsidies is significant

A sustainable transition requires regulation and incentives to push businesses to create ways to perform sustainably, and to create the structures that support businesses and industries, as discussed in **Article 1**. Globally, there are over 280 green taxes in 20 countries and over 320 green incentives in 21 countries, including EU-wide incentives.[c] These vary in their implementation, from the United States tax credit of US$7,500 for electric/hybrid vehicle purchases[ci] to Finland's Deposit Refund System to reduce plastic waste.[cii] The general purpose of subsidies and government expenditure is to benefit socioeconomic development; however, they can often cause additional unintended consequences. For example, worldwide spending on subsidies that are driving the destruction of ecosystem and species extinction is at least US$1.8 trillion per year – about 2% of global GDP.[ciii]

Whilst there are benefits from subsidies, they can also be viewed negatively by being seen as reinforcing practices that have a negative impact on the planet. In these cases, as Business for Nature have positioned it, "public money is financing our own extinction."[civ]

US$1.8tn

is spent annually on subsidies driving the destruction of ecosystem and species extinction.

Panel on Scaling Regenerative Farming at Terra Carta Action Forum at COP27

Improvements to agricultural policies are being made, but there is still work to be done

There are multiple examples of how action striving for a more sustainable future can be incentivised and of how industries are already incentivised to act around the globe. Agribusiness is one industry which has attracted significant attention in 2022, with several publications and campaigns challenging agricultural policies globally, as well as the potential link to deforestation.[cv] Approximately 50% of global deforestation could be attributed to agricultural expansion, with livestock pasture covering about 50% of the expansion. For the moment, timber production is not equally profitable as the returns earned from agricultural activities.[cvi] Therefore, there is a need for financial incentives and regulation across the globe to incentivise sustainable agriculture. A Food and Agriculture Organisation of the United Nations report in 2021 found that almost 90% of the US$540 billion in global subsidies given to farmers every year are "harmful, damaging people's health, fuelling the climate crisis, destroying nature and driving inequality by excluding smallholder farmers."[cvii] To motivate and enable farmers to transition to regenerative farming methods, sustainable action must be supported and incentivised throughout the farming value chain. Focus should be on building value for farmers as a result of this transition – this could be achieved through cost sharing or rewarding farmers for making progress.[cviii]

Whilst some progress has been made on reviewing agricultural subsidies, such as the reform of the EU's Common Agricultural Policy (CAP),[cix] there is still much work to be done to ensure biodiversity is protected and restored.[cx] Since its departure from the EU, the United Kingdom has looked towards implementing a local replacement for the EU CAP, known as the Environmental Land Management Scheme (ELMS), with the intention of providing support following the mantra of 'public money for public goods.[cxi]

90%

of the US$540bn in global subsidies given to farmers every year are damaging people's health, the planet, and Nature, and are driving inequality.

The speed of uptake of electric vehicles (EVs) could be accelerated by appropriate policies and subsidies

Incentives and regulation can be harnessed to encourage a change of course for harder-to-abate industries. Whilst transport pollution is a key contributor to climate change, the innovation of EVs has introduced a more sustainable alternative that is helping alleviate emissions within the transport sector. In various countries, purchase of an electric or hybrid vehicle is supported by subsidies, parking and charging is discounted or free of charge, often with Low Emission Zones in urban areas.[cxii] These incentives have been identified as effective for both directing consumer behaviour towards EVs and positively contributing to the environment in which they are implemented. The deployment of EVs is, however, not equally simple to carry out when comparing the Global North and South, nor is it easy to implement even within specific country borders. Building vehicle charging infrastructure in rural areas could be more challenging due to higher costs and less availability of electricity when compared to urban areas. In addition, some countries are highly dependent on second-hand vehicles, and it could be many years before EVs are widely available to purchase on the second-hand market.[cxiii] Even though there is an increasing number of subsidies and schemes aiming to aid with the purchase of EVs, these are not accessible for everyone, with access to these options being more challenging in emerging and developing economies. Nevertheless, there are several examples of countries in Africa providing tax benefits and subsidies to incentivise the purchase of EVs, along with examples of cities worldwide adopting electric bus fleets. The private sector and governments have also been supporting the deployment of electric two/three-wheelers as alternative modes of transport.[cxiv] The EV market and its future development is highly dependent on the continued decrease in vehicle purchase cost and the incentives governments and businesses are willing to issue.[cxiii]

According to the IEA, sales of EVs doubled globally in 2021 from the previous year to a new record of 6.6 million. Back in 2012, just 120,000 electric cars were sold worldwide. In 2021, more than that many were sold each week. Nearly 10% of global car sales were electric in 2021, four times the market share in 2019.[cxiv] Whilst the EV market is growing rapidly, it is also critical that renewable energy production capacity continues to grow to ensure the electricity used to power EVs is truly emission-free.[cxiii]

Even with these positive results, the growth and incentivisation of EV markets and supply chains must be supported with policies that maintain a controlled growth within the EV market.[cxv] Sustainability throughout the entire value chain should, for example, include considerations of the increasing need for battery raw materials such as copper, lithium and cobalt, and the environmental and social impacts of their sourcing. Cobalt mining, for example, with over 70% of mining taking place in the Democratic Republic of Congo (DRC), has associated human rights risks, as the supply chain often includes a lack of safety standards as well as the use of child labour.[cxvi] In addition, it will be critical to explore innovative alternatives and technological solutions to ease the demand pressure for critical minerals and metals to further develop battery and EV value chain sustainability.[cxvii]

Whilst government intervention and control will be key in the mass adoption of EVs, private sector businesses also have a role to play. Businesses can look to transition their fleets of vehicles towards electric alternatives and can also offer incentive schemes to their employees to encourage them to switch their own vehicles to EVs.

Widespread adoption of a carbon market is key in the battle against climate change

Article 8 also calls for the creation of a universally accepted carbon price to correct the market failure that exists in favour of fossil fuels. Carbon markets are seen as a key component of the solution to climate change, with more than two-thirds of countries planning to use carbon markets to meet their NDCs as part of the Paris Agreement. This is because carbon markets help to mobilise resources and reduce costs of transition to give countries and businesses the space to smooth their low-carbon transitions.[cxviii] It is estimated that trading in carbon credits could reduce the cost of implementing NDCs by more than half, leading to savings of up to US$250 billion by 2030.[cxix]

Currently, there are various versions of carbon markets around the world, with each being constructed in different ways, with different standards for carbon offset verification, and, often, limited controls to ensure the same carbon offsets are not being sold in several markets. Having different standards for verification means that the quality of carbon offsets can vary between carbon markets, with some carbon offsets having negative impacts in other ways. For example, mass tree planting, which usually uses fast-growing, foreign trees may be a carbon offset and so be rewarded with carbon credits, although it can have negative impacts on biodiversity and take up land that could be utilised in a more valuable way considering local people, livestock, and wildlife.[cxx]

Setting and enforcing a carbon price requires convergence on a uniform global carbon market, which would need to be transparent, credible, and verifiable. The standardisation and regulation of a global carbon market would uphold integrity and instil confidence in the market, allowing the market to properly reward those businesses carrying out legitimate carbon offsetting activities and penalising those continuing to emit, leading to real and substantial reductions in emissions. A globally agreed upon carbon market would also provide a vehicle for those countries with the highest emissions to provide finance to less economically developed countries, who may be able to sell carbon offsets.

Trading in carbon credits could reduce the cost of implementing NDCs by more than 50%.

Lenders and insurers have significant power to influence business decisions across the economy

The availability and cost of finance and insurance can have significant impacts on the choices businesses make and the projects they undertake. As such, banks and insurers have a role to play by ensuring that businesses are incentivised to pursue environmentally positive projects and practices and dissuading them from expanding or continuing unsustainable operations. This could be done by offering preferential rates to businesses looking to finance positively impactful projects, or by refusing to offer insurance for harmful and unsustainable projects.

To assess the sustainability credentials of projects and businesses' operations, banks and insurers will need to obtain data and information from potential clients, and so universally accepted methodologies and frameworks would prove useful here to reduce the reporting burden on businesses and ensure these financial institutions can easily obtain credible information from them. This is discussed further in **Article 9 – Adopt Common Metrics and Standards.**

Finance providers have already started to roll out products that reward sustainability-focused projects, often dubbed as 'green-finance', whilst some have launched sustainability-linked loans, which give borrowers the opportunity to apply the loan towards general business purposes, with the terms tied solely to their ESG-related performance and not to the use of the proceeds.[cxxi] One example of a green finance product is NatWest's Green Loan, which is created to support businesses' sustainability ambitions, by aiding them with purchases that will further their green transition. The funding is provided with no arrangement fee and aims to further the development of clean buildings, energy, transport, and sustainable agriculture.[cxxii]

A 'loss and damage' fund was agreed upon at COP27

Most GHG emissions originate from developed countries, however, studies including a recent study by the International Institute for Environment and Development (IIED) have highlighted that countries with lower GDP per capita are at greater risk of suffering losses and damage as a result of climate change.[cxxiii] Notably, the African continent contributes the least to climate change yet is the most vulnerable to its impacts.[cxxiv] Whilst G20 countries represent around 75% of global GHG emissions, Pakistan has seen US$40 billion in damages from severe flooding[cxxv] but emits less than 1% of global emissions.[cxxvi]

Because of this imbalance between the contributors to climate change and those feeling the effects of it, there have, for many years, been calls for reparations to be paid by serial emitters to help fund climate mitigation in developing countries. These calls were acted on at COP27, at which nations agreed to the creation of a 'loss and damage' fund, in which developed nations would provide financial support to those nations most in need of funds to aid climate adaptation. The details of the fund, including the methodology for calculation of payments, is still to be worked through, although it is suggested this will be completed in time for 2023's COP28.[cxxvii] Regardless, emitting economies are now aware that their continued emissions may begin to cost them directly, and so the creation of this fund could act as an incentive for countries to reduce their emissions in the future.

How has SMI made an impact on Article 8 in 2022?

The SMI Health Systems Task Force published recommendations for reducing healthcare supply chain emissions

Exploring and showcasing solutions to incentivising industries to reduce carbon emissions is key to **Article 8** and, with this in mind, the SMI Health Systems Task Force produced a series of recommendations on how to reduce healthcare supply chain emissions.

The healthcare sector generates approximately 5% of total global emissions, over half of which are driven by supply chains.[cxxviii] Most of these emissions are generated by early-stage processes, such as raw material extraction and processing. It is therefore essential for manufacturers to work alongside their suppliers to decarbonise supply chains for healthcare systems to reach net zero.

By bringing healthcare sector leaders together, the SMI Health Systems Task Force hopes to demonstrate concrete actions that can be taken to reduce the carbon footprint of healthcare and ultimately improve public health and societal outcomes. Private-sector members are committed to:

- Decarbonise their own operations, and reach net zero by 2045.
- Align on a set of common supplier sustainability standards to decarbonise the entire supply chain.
- Explore new solutions to support green transport, green heat, and access to renewable energy in China and India.

Example recommendations of practical steps that can be taken to decarbonise healthcare supply chains include:

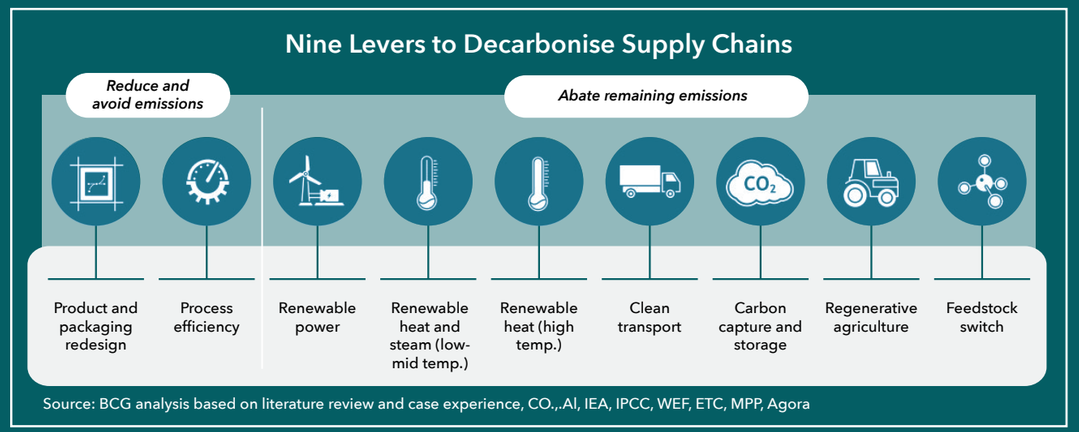
Pharma, biopharma, and med-tech businesses can track and disclose product level emissions, set targets to decarbonise their own operations, and engage with suppliers to abate upstream supply chain emissions.

Governments and policymakers can create the right incentives and environment to accelerate the transition to low-carbon supply chains (e.g., by funding green energy projects and pricing carbon) and set standards to promote efficient use of resources and energy.

Regulatory bodies can support the accelerated approval of CO_2, reducing improvements to products and processes, and mandate reporting on emissions (e.g., through green labelling).

Health authorities and payers can include sustainability as a criterion in procurement and reimbursement decisions and set ambitious green supplier standards.

To read the report in full, click here



Source: BCG analysis based on literature review and case experience, CO.,.AI, IEA, IPCC, WEF, ETC, MPP, Agora

Spotlight on: Shell, Accenture and Amex GB

In June 2022, Shell, Accenture and Amex GB announced the launch of one of the world's first blockchain powered digital book-and-claim solutions for scaling SAF. The solution, known as "Avelia", was the largest SAF book-and-claim pilot at launch, offering around 1 million gallons of SAF, and aims to demonstrate the credibility of the book-and-claim model by using blockchain technology to ensure the environmental attributes of SAF are securely allocated to businesses and airlines once the aviation fuel has been delivered into the system. The hope is that this development will help to reduce emissions for businesses and airlines and ensure transparency and accountability by avoiding issues such as double-counting.

To read the associated press release, click here

> "The progress made by the SMI since its launch only three years ago in Davos has been truly remarkable. His Majesty King Charles III has inspired industry across 19 SMI Task Forces to develop transition plans with clear, measured, and transparent targets, demonstrating their commitment to Nature, People and Planet."
>
> **- Patrick Holden, CBE,**
> CEO and Co-Founder, Sustainable Food Trust

Spotlight on: Cargill

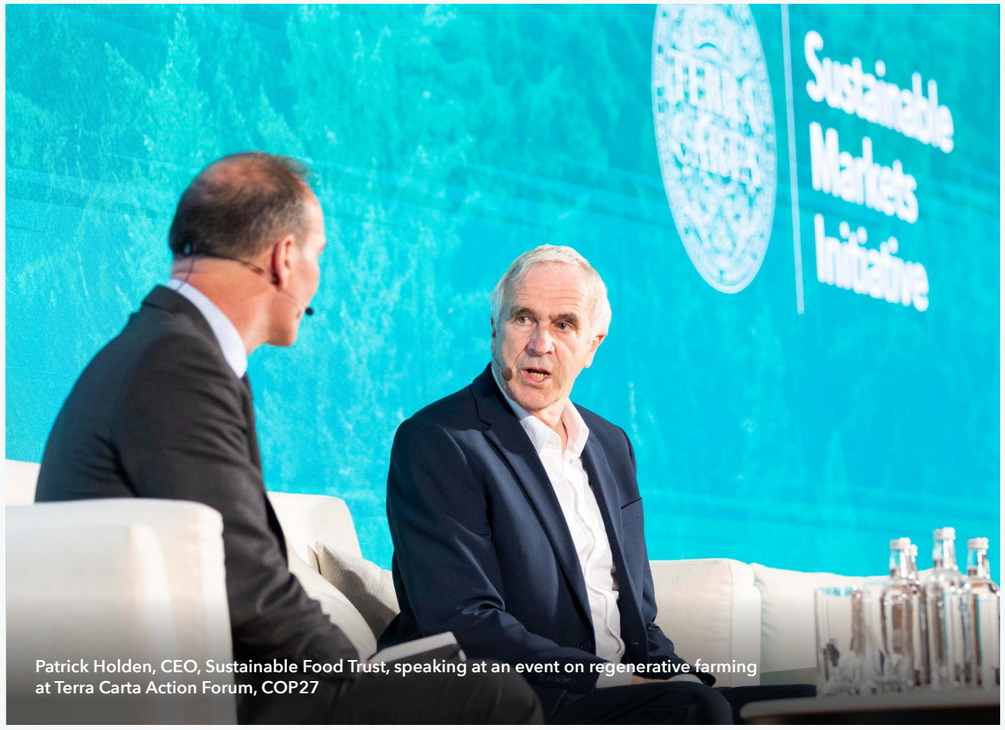
Cargill has exemplified the second major theme of **Article 8**, which is to explore the role industry can play to encourage the adoption of carbon pricing. The business has implemented RegenConnect™, a voluntary market-based regenerative agriculture programme offering producers a simple, flexible, and transparent way to be rewarded for positive environmental outcomes. The programme, which has so far been rolled out in 15 US states, pays farmers per ton of soil carbon sequestered whilst providing them with a choice of regenerative practices to adopt.

To read more about the programme, click here

Spotlight on: Sustainable Food Trust

By working directly with the farmers, the Sustainable Food Trust's mission is to accelerate the transition to more sustainable food and farming systems that nourish the health of both people and planet. The agricultural industry faces huge challenges - from the lack of a sound business case for producing food in such a way that provides a solution to climate change and rebuilds lost biodiversity, in addition to a general confusion about what to eat to be sustainable and healthy. Tackling these major barriers preventing large-scale uptake of sustainable food production, the Sustainable Food Trust advocates for policy change, business intervention and need for the Global Farm Metric - a globally harmonised framework for measuring sustainability on farms. This framework could be used by all companies to improve the transparency of sourcing, inform future markets for Natural Capital and underpin future food labelling to give power back to consumers.

To read more about the programme, click here



Patrick Holden, CEO, Sustainable Food Trust, speaking at an event on regenerative farming at Terra Carta Action Forum, COP27

Focus areas for 2023 and beyond

Market incentives, such as subsidies, can have a significant impact on the activities carried out across the economy. As such, **Article 8** calls upon the private sector to influence the creation of incentives to accelerate progress towards a more sustainable economy, whilst calling for perverse subsidies and incentives to be removed.

Actions that the private sector and economic actors could adopt that will further the ambition and deliver the results required include:

1. Improve industry understanding of carbon pricing, incentive, and cross-border models and explore how to further the application of a carbon price to correct the market failure that exists in favour of fossil fuels.

2. Explore the role industry could play to encourage the adoption of a carbon price, including considering the impact of carbon price on operations and supply chains. This article introduces five actions to support development of green subsidies, ranging from the establishment of a carbon market to the improvement of lending practices and the education of industries on green incentives.

3. Ensure revenue generated from carbon pricing is invested transparently into sustainable transition efforts, the green economy, green technology development and Natural Capital.

4. Explore how to tackle perverse subsidies, lending, and investment (e.g., fossil fuel, forestry, fisheries, and agriculture).

5. Examine and improve lending practices, particularly within the financial services industry, in line with net-zero and nature-positive practices, targets and opportunities.

ARTICLE 9

Adopt Common Metrics and Standards

Introduction

The Terra Carta clearly highlights the need for setting ambitious targets and reaching consensus to achieve a sustainable future. Meaningful delivery of this ambition will not be possible without accurate reporting on progress against common metrics and standards with credible data. **Article 9 – Adopt Common Metrics and Standards** calls on the private sector to work towards alignment of sustainability-related standards and the development of unified metrics.

This Article highlights six key areas for businesses, investors, and regulators to focus on, ranging from the adoption of international standards to voluntary non-financial reporting and the integration of sustainability considerations in businesses' management systems.

Global Picture

It is critical for the private sector to adopt common metrics and standards

As an article from World Economic Forum describes "Decision-making without data is akin to going on a hike up a mountain without a map to show you where you are going or how far you have gone."[cxxix] The increasing expectations of businesses to understand and report on their impact and sustainability credentials has been highlighted in recent studies with CEOs, who identify the need for common, comprehensive standards and frameworks,[cxxx] as have shareholders, customers, employees, and other stakeholders.[cxxxi]

The adoption of common metrics is needed to increase efficiency and to reduce the burden of reporting for businesses under misaligned regulations. Whilst the private sector must play a key role in driving the development of common standards and global agreement must be reached, it is then the responsibility of governments worldwide to drive the use of these standards through policy and regulation. This will help to ensure businesses' sustainability reporting is credible and comparable.

Increased transparency will also help inform the decision-making of investors and financers. Consistent metrics and reporting frameworks allow them to compare businesses in a like-for-like manner with confidence that the methodologies behind the information being disclosed is truly comparable. This allows investors to integrate sustainability considerations across their decision-making processes, better report on their financing activities, manage their portfolio risk, and ultimately allocate capital to the most sustainable initiatives.

Finally, and crucially, increased transparency and convergence on common standards and metrics will aid consumers with understanding the sustainability impacts of their purchasing and consumption decisions. As discussed in **Article 3 – The Power of Consumers**, this increased understanding amongst consumers could have massive impacts on global demand and put pressure on businesses and industries to decarbonise and improve their ESG credentials.

The economy is beginning to converge on sustainability reporting standards, but there is still work to be done

In the last decade, a vast array of regulations and standards have been developed and put into place, with the scope and pace of sustainability reporting regulation accelerating in 2022.[cxxxii] Key frameworks include TNFD[cxxxiii], TCFD[cxxxiv], and the Global Reporting Initiative (GRI)[cxxxv]. In answering **Article 9**'s call of enhancing global environmental policy harmonisation, more and more global businesses now disclose their sustainability credentials through these standards, and some governments are even mandating this disclosure.[cxxxvi]

In 2020, the WEF-IBC, along with SMI members Deloitte, EY, KPMG and PwC, launched the Stakeholder Capitalism Metrics.[cxxxvii] This set of universal metrics focuses on the four pillars of People, Planet, Prosperity and Governance and is comparable across businesses and industries. Bank of America is amongst the 120+ global businesses that have adopted the metrics in their annual and sustainability reports.

> **"By using the Stakeholder Capitalism Metrics, we can spend less time worrying about what to measure and what measurement system, and more time measuring progress."**
>
> **- Brian Moynihan,**
> Chair and CEO, Bank of America and Co-Chair, SMI

Sustainability-related metrics are hard to agree upon due to industry-specific nuances

At the global level, determination of universal metrics themselves is an important challenge facing the private sector. A telling example of the difficulty of creating an agreed-upon ESG standard can be seen in the EU Taxonomy for Sustainable Activities. In 2022, this taxonomy has been the cause of much debate, as natural gas and nuclear energy production and usage have been classified as 'green' within the taxonomy, although many industry experts and EU states have opposed their inclusion. Businesses face the challenge of navigating and understanding many existing frameworks and standards, often without clarity on which ones will be most impactful in truly accelerating a sustainable future.[cxxxviii]

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How has the SMI made an impact on Article 9 in 2022?

The Global Farm Metric is working to create a framework to support farmers and the agribusiness sector with understanding their sustainability impacts

The work of the Global Farm Metric is an excellent example of making progress towards **Article 9**'s theme of integrating data to enable sustainable value chains.[cxxxix] Today, almost half of the world's habitable land is farmed to feed global food production system, which ultimately means use of this land determines the course of biodiversity, climate and future health.

The Global Farm Metric has established a consistent set of indicators for data collection on key areas of impact. They will enable farmers to identify areas for improvement, support decision making, reduce negative impacts and mitigate unintended consequences. The framework is to be embedded into farm assessments, audits, certification schemes and management tools, which will reduce the duplication of data collection and input by farmers.

When adopted, the Global Farm Metric will have established a baseline of data for sustainability. This framework provides a baseline to monitor progress towards sustainability goals and, by insisting on a holistic approach, mitigates against any unintended consequences associated with a focus on singles issues. The framework includes 12 key areas including Plant & Crop Health, Energy & Resource Use, Air & Climate, Social, and Biodiversity.[cxl]

The Global Farm Metric framework has been trialled on 100 farms across the UK and 20 farms in Kentucky, US, with additional testing currently underway in Malawi. This framework could be used by all companies to improve the transparency of sourcing, inform future markets for Natural Capital and underpin future food labelling to give power back to consumers.

To read more about the Global Farm Metric, click here

Source: Global Farm Metric

Brian Moynihan speaking at Terra Carta Action Forum at COP27

The SMI is supporting the development of common metrics and standards through standing up a new cross-industry Task Force focused on measurement and transparency

In 2022, the SMI stood up the Measurement and Transparency Task Force, which is chaired by AECOM and aims to develop a globally consistent measurement system and tools for enabling more effective and standardised measurement and management of the sustainability impact of key infrastructure projects. The Task Force plans to initially focus on measurement related to carbon, nature-based solutions and water use in infrastructure. It will drive delivery through building a network of partnerships, building the capacity of partners to deliver standardised collection, and processing of data, and identifying existing projects and campaigns that are already creating a positive impact with the aim of enhancing their success rather than acting as competition.

Furthering the **Article 9** objective of improving sustainability metrics and industry benchmarks, the Task Force plans to establish a proof of concept for reporting and metrics in the first half of 2023 and deliver the system in the latter half of the year.

The SMI Energy Transition Task Force published a framework to help financial institutions better drive decarbonisation efforts

Reaching net zero requires a transformation of how energy is produced and consumed. This is complex and necessitates greater understanding of how businesses can and are 'transitioning', to both reduce emissions and develop green alternatives. This is, in fact, the first theme of **Article 9**, which calls for continued convergence of standards and reporting of environmental impacts.

To address this need for greater understanding, the SMI Energy Transition Task Force has published a Greening and Decarbonising Framework to help investors, finance providers and insurers identify transitioning businesses and track progress towards net zero. The framework recognises the activities and impact of businesses reducing and removing emissions, as well as those accelerating the development of low-carbon solutions at scale.

The framework will be delivered with Sustainable Fitch, who will utilise the framework to develop a transition assessment to illuminate the spectrum of businesses in the undefined space between carbon intensive and net zero.

To read the full framework, **click here**

The SMI Private Equity Task Force will publish an approach to valuing carbon at portfolio companies

The approach by private equity firms to valuing carbon is in some ways still in its infancy and those which are doing this take varied approaches. Surveying the SMI supporting firms has, however, identified that a strong majority believe that decarbonisation efforts will command a premium at exit, matched by a view that companies will be penalised for insufficient abatement efforts. This report provides voluntary best practices guidance that private equity firms can be inspired by and adapt as they take steps towards valuing carbon. The guidance offered is practical and actionable, leverages existing data and investment methodologies and can accelerate value creation whilst complimenting existing climate frameworks. Case studies are included to illustrate approaches which some firms or portfolio companies are currently taking to valuing carbon in distinct stages of the investment life cycle.

This report will be made public in early 2023 on the SMI Private Equity Task Force webpage.

Spotlight on: Johnson Controls International

Johnson Controls International is helping to drive the adoption of common metrics and standards, through requiring that all their suppliers provide transparent ESG reporting. Recognising how suppliers are critical to their overall success, Johnson Controls has performed a sustainability assessment of preferred suppliers, asking them to answer questions related to their ethics policies, labour conditions, water management, environmental impact, supplier diversity, and supplier reporting (to CDP).[cxli]

The survey asks if the supplier has a programme in place to minimise water consumption, along with asking whether they have water reduction goals, action plans and available data and trends. The survey then translates into a scoring reported on suppliers' scorecards. For their preferred suppliers' global scorecards, this key metric is equal in weight to cost, quality and delivery scorecard metrics. This is a textbook example of how a business could integrate ESG considerations within their general business decision-making processes and influence the other businesses in their supply chain to put an increased emphasis on ESG issues.

Spotlight on: Sustainable Healthcare Coalition

Responding to **Article 9**'s call to improve understanding of sustainability measurement, SMI Health Systems Task Force member Sustainable Healthcare Coalition (SHC) has drawn on its practical expertise to produce tools to appraise healthcare products to reduce environmental impact.[cxlii]

This collaboration between the UK's National Health Service (NHS) and private sector businesses engaged with a range of players to amplify action on net-zero healthcare. This approach has focused expertise across the health system to address the significant contribution of pharmaceuticals and medical devices to healthcare GHG emissions. SHC's internationally recognised Greenhouse Gas Healthcare Product Guidance, the first in the healthcare sector and only the second in any sector, is an important development in understanding the GHG emissions of healthcare products through manufacture, use and disposal.

Going forwards, the Task Force hopes to apply the SHC' s guidance on products and patient care pathways to healthcare markets across the globe.

To read more about the Sustainable Healthcare Coalition, click here

Focus areas for 2023 and beyond

The creation and adoption of common metrics and standards is key to ensure businesses, regulators, investors and consumers can speak the same language in terms of sustainability, enabling businesses to set and measure progress towards credible targets and communicate their sustainability impacts. **Article 9** calls upon the private sector to support and accelerate work to establish common metrics and standards by working with NGOs, regulators and industry experts.

Actions to be undertaken by businesses:

1. Redefine value measurement by integrating sustainability data into management decisions.

2. Improve understanding of sustainability metrics and industry benchmarks for board members, employees, shareholders, clients, suppliers, and consumers.

Actions to be undertaken by investors

3. Support the international business, financial and accounting communities to establish a unified global system of ESG reporting in cooperation with public authorities and leading voluntary standards.

4. Focus on sustainability data integration to enable responsible decision-making, trust, and transparency.

Actions to be undertaken by regulators

5. Encourage the convergence of standards and reporting towards universal metrics, such as those outlined in the TCFD framework and by the WEF-IBC.

6. Outline opportunities to enhance global environmental policy harmonisation, integration, and coherence.

ARTICLE 10

Catalyse Science, Technology and Innovation

Introduction

Article 10 - Catalyse Science, Technology and Innovation calls for leaders to explore and reinforce the possibilities that connecting technology, science and nature can enable. To achieve this, significant growth is required in Science, Technology, Engineering and Maths (STEM) as well as Research and Development (R&D) to reach scalable, innovative climate solutions. Whilst technology advances have accelerated in industries like wind and solar power and electric vehicles, scaling action across industries will require transformative systems and significant investments into STEM and R&D, as well as effective business models to support scaling in the long term.[cxliii]

Global Picture

Science, technology and innovation are key to meeting the challenge posed by climate change

The Earth Overshoot Day, which marks when humanity's budget for natural resources for one year has been reached, arrived in 2022 on 28 July. The day is now five months earlier than a mere 50 years ago.[cxliv] While natural resources continue to be exploited, the need for them is rising as both the global population increases and societies become wealthier, with increasing energy consumption requirements.

According to McKinsey Global Energy Perspective 2022, investments in renewables are expected to grow by 4% per year until 2035 totalling to 37% of global energy investments in the next 15 years. As this trend is expected to continue, it is imperative to rapidly scale technological capabilities to meet the demand and enable the transition. Governments and businesses have set climate pledges for 2030, which will require further large investments in and implementation of renewable technologies.[cxlv]

As the world is fast approaching the deadline for the 1.5-degrees target, investment and research on technologies that accelerate sustainability must be scaled at pace.[cxlvi] The technologies listed in **Article 10** of the Terra Carta are expected to scale across industries as enablers for decarbonisation and circularity. In many circumstances, multiple technologies will be needed at once to meet more complicated targets. The list is by no means comprehensive, and many more innovations are needed to completely address humanity's negative environmental impacts.

There are a number of existing technologies highlighted in Article 10, which have potential to be scaled. These include:

Green hydrogen

This is hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity.[cxlvii] This is a very different pathway compared to both grey and blue hydrogen. Possibilities to drive scalability of green hydrogen could be utilising technological possibilities such as digital twins, advanced analytics, and certificates of origin to guarantee the renewable nature.[cxlviii]

Advanced biofuels

These are liquid fuels that generally derived from non-food-based feedstocks and yield a life cycle reduction in GHG emissions of at least 50% compared with fossil fuels.[cxlix] SAF is a key biofuel that is beginning to enter the market at pace to help reduce aviation emissions.[cl] SAF was also listed as a potential game-changer technology in **Article 5** as it provides an existing pathway to reduce aviation emissions safely and without retrofitting infrastructure.

Energy storage

Effective energy storage has the ability to time-shift energy, storing at times of surplus and releasing at times of deficit; helping to drive energy-efficiency. There are numerous applications for energy storage technologies, including providing support services to the electricity grid, or to an individual consumer.[cli] As mentioned in **Article 5**, as the price of batteries continues to decrease, large battery storage systems will become a consideration for any carbon-free grid.[clii]

Bio-based materials

These are products that mainly consist of a substance, or substances, derived from living matter, biomass.[cliii] These materials either occur naturally or are synthesised, or it may refer to products made by processes that use biomass. Products that are made of non-natural materials such as plastics often cannot be upcycled and contribute to waste pollution. Making products – especially those that are single-use – out of natural materials which are biodegradable promote circularity and product life cycle consideration.[cliv]

There are a number of developing technologies highlighted in Article 10. These include:

Electric flight

In just a few years, the idea of battery powered airplanes has gone from a moon-shot to a possibility. From industry start-ups to established businesses such as Airbus, progress to electrify flight has made significant progress in recent years.

Green steel

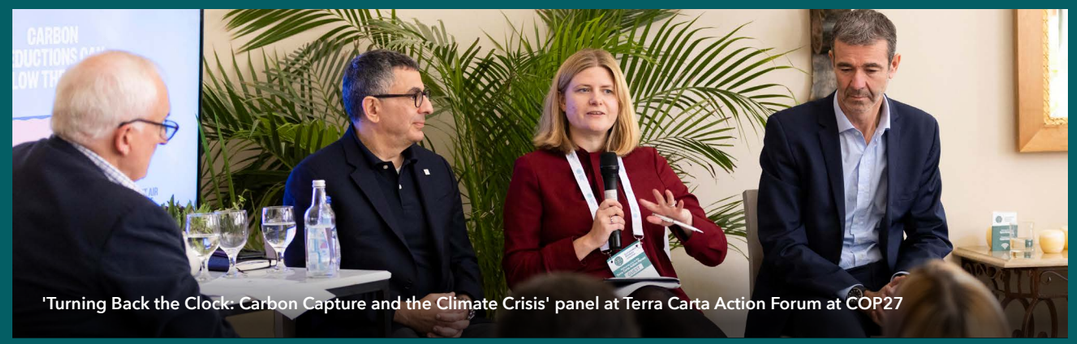
Steel is the most used metal in the world but is incredibly carbon-intensive to produce, accounting for around 8% of global emissions. Green steel can be made without the by-product of carbon emissions using several innovative technologies throughout the manufacturing process.[clv]

Nuclear fusion

Whilst still years away from completion, the International Thermonuclear Experimental Reactor (ITER) is a €13 billion megaproject being constructed in France that aims to understand how to maintain a fusion reaction in a controlled environment.[clvi]

How has the SMI made an impact on Article 10 in 2022?

The SMI Carbon Capture, Use and Storage (CCUS) Task Force is engaging with new technologies



'Turning Back the Clock: Carbon Capture and the Climate Crisis' panel at Terra Carta Action Forum at COP27

Carbon Capture, Use and Storage (CCUS) technologies are being explored alongside developments to reduce the amount of GHG emissions released into the atmosphere.[clvii] In the International Energy Agency's Sustainable Development Scenario (a climate scenario describing a pathway that enables the world to meet climate, energy access and air quality goals and that is fully compliant with the Paris Agreement, while maintaining a strong focus on the reliability and affordability of energy for a growing global population[clviii]), for example, the mass of CO_2 captured using CCUS technologies rises to around 5.6 gigatonnes in 2050.[clix]

One form of carbon dioxide removal (CDR) technology is Direct Air Capture (DAC). DAC removes CO_2 directly from the atmosphere, which can then either be stored permanently in deep geological formations or be used, for example, in food processing or by combining with hydrogen to produce synthetic fuels. DAC is currently very expensive, although the widespread deployment of the technology could be assisted by policymakers tailoring policy to drive down the cost. Even if the full transition to a net-zero energy system without CDR can take place quicker than expected and at a lower cost, then the cost of developing DAC technology could be seen as "insurance".[clx]

Commenting on the progress of DAC technology development at the SMI's CCUS Task Force session at COP27, CEO of Storegga, Dr. Nick Cooper, said that "it has gone from an exotic periphery to mainstream, as concerns around the gap between what nature can do and what needs to be removed from the atmosphere grow. Research shows us that nature can only get us part of the way there. We need industrial solutions to industrial problems."

As businesses are setting targets to reach net zero and outlining transition plans by considering their roadmap to decarbonisation, they may also consider offsets such as DAC technologies to offset their hardest-to-abate emissions. This can be achieved by businesses purchasing carbon credits from a credible platform. As a new Task Force the SMI Carbon Capture, Use and Storage Task Force have during 2022 started building a dedicated SMI-led DAC project, encouraging businesses to provide economic support for carbon credits generated by this project once they are brought to market.

Whilst there should still be emphasis on the development of new technologies to decarbonise industries across the economy, CCUS can help to buy time so that the rate of transformation is more manageable for the hardest-to-abate industries, whilst also acting as insurance in case unexpected constraints or setbacks arise in other decarbonisation pathways.[clxi]

The SMI Health Systems Task Force published a paper discussing how digital solutions can be used to reduce emissions in clinical trials

Clinical trials in the healthcare sector produce up to 100 million tonnes of CO_2e emissions per year. Digital solutions are playing an increasingly important role in driving clinical trial efficiencies, reaching larger and more diverse participant groups, delivering improved patient outcomes, and reducing costs. The emissions reductions driven by digital solutions in clinical trials generally outweigh their own carbon footprint, and there are further steps that can be taken to minimise this footprint (e.g., reusing and recycling of wearables, data storage optimisation). The white paper introduces five key areas in which digital solutions could be used to reduce emissions in clinical trials.

The white paper however highlights the barriers to scaling digital health solutions in clinical trials, as further work is required, especially on tackling regulatory hurdles, such as geographical differences. Challenges have been identified both in integrating digital systems together and in managing costs in connection with choosing the right systems. In addition, data privacy concerns, challenges in accessibility of technology and general difficulties adapting new technology are sometimes associated with new digital solutions.

The SMI Health Systems Task Force encourages all parties within the entire clinical trials ecosystem, including regulators, researchers, trial sponsors, and digital solution providers to act to further decarbonise health systems by utilising digital solutions. In doing so, the Task Force is furthering one of the key themes of **Article 10**, which calls for further exploration into greener industries through technology and innovation.

As a collaborative alliance of public and private sector leaders, the SMI Health Systems Task Force is uniquely positioned to accelerate decarbonisation efforts across the clinical trial ecosystem, and has committed to:

- Develop a common framework to assess trial emissions by 2023 and subsequently start to measure greenhouse gas emissions in phase 2 and 3 clinical trials. Companies aim to report phase 2 and 3 trial emissions for trials starting in 2025.
- Align new trials to companies' decarbonisation pathway and set trial emissions reduction targets for 2030 at the latest.
- Incentivise clinical research organisations and clinical trial-related suppliers to commit to a framework to measure and reduce emissions, including through the use of digital solutions.
- Target 90%+ of trials starting in 2025 to include a review of how digital solutions can reduce emissions.

To read the Health Systems Task Force report, click here

"We have really an enormous opportunity to leverage science, innovation and digital tools to help us reduce carbon emissions in the healthcare sector. This is central to our future."

- Sir Pascal Soriot,
CEO, AstraZeneca and Champion, SMI Health Systems Task Force

The SMI Hydrogen Task Force produced a framework for transport and storage of hydrogen

The SMI Hydrogen Task Force was created to support acceleration of the comprehensive deployment of hydrogen as one of the decarbonisation tools that will play a critical role in achieving global net-zero emissions.

Answering **Article 10**'s call to accelerate the development and use of ground-breaking technologies, the SMI Hydrogen Task Force developed a report to identify the status of hydrogen storage and transport systems and address the challenges of developing the hydrogen supply chain, with a focus is on current and future technologies, and on reducing costs for end users. The report's research team studied the best current methods of transport and storage and compiled these methods and associated costs along with regulatory issues.

The report's findings support that green hydrogen costs are high today, but are projected to drop in the years to 2030. Currently, the high cost of logistics and storage is still the main limiting factor for most hydrogen use cases. This report provides limited cost estimates for various modes of transport and options for storage. A hydrogen use case matrix is provided to assess the current technical readiness and speed of adoption for various use cases. Continued research and updates on use cases is recommended.

The report calls for the private sector to continue developing technologies for hydrogen production and use cases. Hydrogen storage such as salt caverns, and for transportation the use of pipelines, or other carriers like LOHC will help drive down the cost of transportation and storage.

Government should increase funding support for hydrogen production, storage and transport, and seek to reduce regulations for development. Hydrogen hub funding should be expanded, and collaboration with SMI companies and task forces should be fostered.

This framework will be published in early 2023.

Spotlight on: Phool

Aligned with **Article 10**'s call to the private sector to invest in bio-based alternatives, Phool has discovered an alternative to Phool has discovered an alternative to environmentally damaging animal and plastic leather utilising floral waste fibre - a new material called Fleather. Through this innovation, Phool has collected 13,000 tonnes of waste and employs over 160 women, whilst working towards a challenging aim: cleaning India's holy river Ganges from floral waste.

This ground-breaking innovation is a great example of how private sector can make a difference by exploring unique solutions utilising Nature and science.

To read more, click here

Spotlight on: The Great Bubble Barrier

More than 8 million tonnes of plastic end up in oceans worldwide annually, with the majority travelling from canals and rivers.[clxii]

The Bubble Barrier is a solution for collecting plastic waste from rivers before they reach the sea. The technology behind the Bubble Barrier is similar to the process by the oil industry to contain oil spills. The Bubble Barrier works by pumping air through a perforated tube placed diagonally on the riverbed to create a "curtain" of bubbles, which bring plastic up to the surface and into a waste collection system, keeping wildlife and river users unharmed. The invention catches around 86% of plastic waste. Several Barriers have already been installed in the canals of The Netherlands, with further installations planned for Germany and Portugal.

Storegga have signed a Memorandum of Understanding with PETRONAS, the national oil and gas company of Malaysia, to assess and determine the commercial, regulatory, and economic factors required for the development of carbon capture and storage (CCS) hub and cluster projects in Malaysia, and potentially beyond. The phased work will explore collaboration on CCS and related projects in Malaysia and internationally, including the potential development of projects in DAC.

To read more about the Great Bubble Barrier, click here

Spotlight on: Storegga

To read the relevant press release, click here

Focus areas for 2023 and beyond

In order to meet global sustainability targets and achieve the goals of the Paris Agreement, the economy must embrace and support innovation and the development of new technologies. **Article 10** calls upon the private sector to support, deploy and scale new technologies and innovations.

Actions connecting Nature, technology, and innovation:

1. Explore a comprehensive industry strategy for science, technology, and innovation, with clear entry points for investment aligned to industry and country roadmaps.
2. Support the transdisciplinary nature of innovation, research, and development. This includes connecting Nature, science, technology, and engineering with complex systems thinking traditional knowledge and design thinking.
3. Explore and invest in the potential of biomimicry and the study of Nature to accelerate the sustainable transition in almost every industry.

Actions implementing green and circular innovations into business models and investments

4. Advocate for innovation in greener and more circular design from the outset to enable greater uptake across the value chain. This includes prioritising investment innovation throughout the product/service life cycle to incentivise sustainable solutions.
5. Explore and invest in the potential of the circular bioeconomy to develop sustainable bio-based alternatives to fossil-based products, and to create sustainable industries with green economic growth.
6. Explore the rapid deployment of clean energy innovations in industry/business operations and supply chains.

Actions exploring both new and scalable solutions with a technology-driven perspective

7. Explore the potential of CCUS (engineered and Nature-based) to reduce emissions and to help draw down legacy carbon in the atmosphere.
8. Reinforce the opportunity of technology-driven transformation with a focus on sustainable value and the role of technology as enablers of industry, social and environmental progress.
9. Explore new science and technological advances around modelling, artificial intelligence and big data, which provide a basis to better understand complex socio-ecological systems, including more efficient engineering designs, investment predictions for higher return, modelling and simulation to reduce product waste from production to disposal.
10. Enhance access to continuous education and training of young people, communities, and employees in line with the skills, jobs and opportunities of a sustainable future.
11. In support of gamer-changers (**Article 5**), and in partnership with academic and research institutions, encouraging accelerated investment into STEM, Innovation and R&D in the following areas, along with other potential solutions:

- Sustainable transportation methods.
- Biomimicry.
- Advanced biofuels.
- Sustainable Aviation Fuels.
- Green hydrogen.
- Renewable energy storage including batteries.
- Electric flight.
- Nuclear fusion.
- Retrofitting buildings for higher energy efficiency.
- Carbon-neutral construction and infrastructure (e.g., greening steel and cement and exploring bio-based alternatives).
- Soil regeneration for enhanced carbon capture.
- Natural Capital resource monitoring, including by satellite.
- Green infrastructure (e.g., electric charging station networks, aviation, and shipping infrastructure).

Appendix

Approach

Information included in this report includes publicly available information on work produced by the SMI Task Forces in 2022, publicly available information on SMI affiliated companies, and summaries of work by Task Force members.

Industry initiatives such as the SMI Task Forces and other SMI-related collaborative partners and groups have an important meaning, not only for the companies involved, but also and especially for the goals they pursue. However, every such activity must comply with local and regional competition laws, which prohibit agreements, decisions and concerted practices that prevent, restrict or distort competition and enable abuses of dominant market positions. The SMI adheres to these principles and all participating companies ensured that their involvement is not anti-competitive. The initiative is based on the understanding of the participating companies that every company is welcome to contribute to the initiative, the initiative is non-exclusive and on a voluntary basis, and no investment or lending decisions are made as part of the initiative. The participating companies agreed to strictly adhere to the rules set out in the jointly-agreed antitrust guidelines.

Contribution to the SMI Annual Impact Report, or any part of it, or any reference to a third- party organisation within the SMI Annual Impact Report, does not indicate any kind of partnership or agency between the contributors and the SMI, nor any endorsement by that contributor or third party of the SMI Annual Impact Report conclusions or recommendations.

Glossary

Biodiversity

Biological diversity means the variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Biomass fuels / biofuels

A fuel produced from dry organic matter or combustible oils produced by plants. These fuels are considered renewable as long as the vegetation producing them is maintained or replanted, such as firewood, alcohol fermented from sugar, and combustible oils extracted from soy beans. Their use in place of fossil fuels cuts greenhouse gas emissions because the plants that are the fuel sources capture carbon dioxide from the atmosphere.

Carbon capture, use and storage

Carbon capture, utilisation, and storage (CCUS), also referred to as carbon capture, utilisation, and sequestration, is a process that captures carbon dioxide emissions from sources like coal-fired power plants and either reuses or stores it so it will not enter the atmosphere. Carbon dioxide storage in geologic formations includes oil and gas reservoirs, unmineable coal seams and deep saline reservoirs - structures that have stored crude oil, natural gas, brine, and carbon dioxide over millions of years.

Carbon footprint

A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions.

Carbon neutral

Carbon neutrality means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon oxide from the atmosphere and then storing it is known as carbon sequestration. In order to achieve net zero emissions, all worldwide greenhouse gas (GHG) emissions will have to be counterbalanced by carbon sequestration.

Carbon offsetting

Another way to reduce emissions and to pursue carbon neutrality is to offset emissions made in one sector by reducing them somewhere else. This can be done through investment in renewable energy, energy efficiency or other clean, low-carbon technologies. The EU's emissions trading system (ETS) is an example of a carbon offsetting system.

Carbon price

The price for avoided or released carbon dioxide (CO_2) or CO_2-equivalent emissions. This may refer to the rate of a carbon tax, or the price of emission permits. In many models that are used to assess the economic costs of mitigation, carbon prices are used as a proxy to represent the level of effort in mitigation policies.

Climate change

Changes in average weather conditions that persist over multiple decades or longer. Climate change encompasses both increases and decreases in temperature, as well as shifts in precipitation, changing risk of certain types of severe weather events, and changes to other features of the climate system.

Circular economy

A circular economy keeps materials, products, and services in circulation for as long possible. The circular economy, when designed in a thoughtful and inclusive manner, has the potential to protect the environment, improve economics, and elevate social justice.

Chief Sustainability Officer (CSO)

A Chief Sustainability Officer drives the sustainability strategy of an organization, championing and monitoring its efforts.

Decarbonisation

The process by which countries, individuals or other entities aim to achieve zero fossil carbon existence. Typically refers to a reduction of the carbon emissions associated with electricity, industry and transport.

Deforestation

Deforestation is the conversion of forest to non-forest. Between 2000 and 2018, almost 90 percent of deforestation globally was attributable to agricultural expansion, negatively impacting associated ecosystem services such as carbon sequestration and biodiversity. There are persistent trade-offs between agriculture and forests, with competition for land among the most notable; agricultural expansion for cropland and livestock grazing is the largest driving force of forest loss.

Direct Air Capture (DAC)

Direct air capture (DAC) is one type of technological carbon removal that shows promise today and will likely be part of a larger carbon removal portfolio. Compared to other types of carbon removal it uses relatively little space and can also be sited flexibly, so would avoid competition with other land uses and could be built on marginal land or near geological storage sites to minimize the need for CO_2 pipelines. Direct air capture is a technology that uses chemical reactions to pull carbon dioxide out of air. When air moves over these chemicals, they selectively react with and trap CO_2, allowing the other components of air to pass through. Today's leading systems use either liquid solvents or solid sorbents, which are composed of common chemicals that are already in use in other applications today, from soap to water filtration.

Ecosystem

All the living things in a particular area as well as components of the physical environment with which they interact, such as air, soil, water, and sunlight.

Electric vehicle

A vehicle whose propulsion is powered fully or mostly by electricity.

ESG factors

Environmental, social and governance issues that are identified or assessed in responsible investment processes.

- Environmental factors are issues relating to the quality and functioning of the natural environment and natural systems.
- Social factors are issues relating to the rights, well-being and interests of people and communities.
- Governance factors are issues relating to the governance of companies and other investee entities.

Fossil fuels

Carbon-based fuels from fossil hydrocarbon deposits, including coal, oil, and natural gas.

Global warming

The estimated increase in global mean surface temperature (GMST) averaged over a 30-year period, or the 30-year period centred on a particular year or decade, expressed relative to pre-industrial levels unless otherwise specified. For 30-year periods that span past and future years, the current multi-decadal warming trend is assumed to continue.

Greenhouse gas (GHG)

The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO_2), methane (CH4) and nitrous oxide (N20). Less prevalent --but very powerful -- greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).

Hybrid vehicle

Hybrid electric vehicles are powered by an internal combustion engine and one or more electric motors, which uses energy stored in batteries.

Hydrogen pledge

Glasgow, COP26, Tuesday 9 November – The World Business Council for Sustainable Development (WBCSD) and the Sustainable Markets Initiative (SMI) today announced on Industry Day at COP26 the pledges of 28 companies to drive growth in the demand for, and supply of, hydrogen.

This new initiative, comprising of these companies – H_2Zero – will accelerate the use and production of hydrogen as an essential part of the future net-zero energy system.

Pledges across three categories – demand, supply and financial or technical support – have been made by 28 companies representing different sectors from mining to energy, vehicle and equipment manufacturers, and financial services.

Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change is the United Nations body for assessing the science related to climate change.

Just transition

A just transition seeks to ensure that the substantial benefits of a green economy transition are shared widely, while also supporting those who stand to lose economically – be they countries, regions, industries, communities, workers or consumers.

A rapid increase in the speed and scale of actions required to reduce the risks of climate change will create new economic opportunities.

Whilst a just transition is mainly based on environmental considerations, it is also shaped by other structural changes affecting labour markets, such as globalisation, labour-saving technologies and the shift to services.

Natural Capital

Natural Capital includes certain stocks of the elements of nature that have value to society, such as forests, fisheries, rivers, biodiversity, land and minerals. Natural Capital includes both the living and non-living aspects of ecosystems.

Nature-based Solutions

Nature-based solutions refer to a suite of actions or policies that harness the power of nature to address some of our most pressing societal challenges, such as threats to water security, rising risk of disasters, or climate change.

Net Zero

Net Zero is the point when the amount of greenhouse gases emitted into the atmosphere is equally to same amount that's being removed or captured.

Paris Agreement

The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) was adopted on December 2015 in Paris, France, at the 21st session of the Conference of the Parties (COP) to the UNFCCC. The agreement, adopted by 196 Parties to the UNFCCC, entered into force on 4 November 2016 and as of May 2018 had 195 Signatories and was ratified by 177 Parties. One of the goals of the Paris Agreement is 'Holding the increase in the global average temperature to well below 2-dedrees above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5-degrees above pre-industrial levels', recognising that this would significantly reduce the risks and impacts of climate change. Additionally, the Agreement aims to strengthen the ability of countries to deal with the impacts of climate change.

Non-governmental organisations (NGOs)

Organizations that are not part of a governmental structure. They include environmental groups, research institutions, business groups, and associations of urban and local governments. Many NGOs attend climate talks as observers. To be accredited to attend meetings under the Convention, NGOs must be non-profit.

Renewable energy

Renewable energy is energy derived from natural sources that are replenished at a higher rate than they are consumed. Sunlight and wind, for example, are such sources that are constantly being replenished. Renewable energy sources are plentiful and all around us. Fossil fuels - coal, oil and gas - on the other hand, are non-renewable resources that take hundreds of millions of years to form. Fossil fuels, when burned to produce energy, cause harmful greenhouse gas emissions, such as carbon dioxide.

Sustainable Aviation Fuel (SAF)

SAF is a biofuel used to power aircraft that has similar properties to conventional jet fuel but with a smaller carbon footprint. Depending on the feedstock and technologies used to produce it, SAF can reduce life cycle GHG emissions dramatically compared to conventional jet fuel.

The Science Based Targets initiative (SBTi)

The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF).

- The SBTi defines and promotes best practice in emissions reductions and net-zero targets in line with climate science.
- The SBTi provides technical assistance and expert resources to companies who set science-based targets in line with the latest climate science.
- The SBTi brings together a team of experts to provide companies with independent assessment and validation of targets.

- The SBTi is the lead partner of the Business Ambition for 1.5-degrees campaign - an urgent call to action from a global coalition of UN agencies, business and industry leaders, mobilizing companies to set net-zero science-based targets in line with a 1.5-degrees future.

Scope 1, 2, 3 emissions

Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and

Sustainable Development Goals (SDGs)

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

Task Force on Climate-Related Financial Disclosures (TCFD)

One of the essential functions of financial markets is to price risk to support informed, efficient capital-allocation decisions. To carry out this function, financial markets need accurate and timely disclosure from companies. Without the right information, investors and others may incorrectly price or value assets, leading to a misallocation of capital. The Financial Stability Board (FSB) created the TCFD to develop recommendations on the types of information that companies should disclose to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks—risks related to climate change.

Taskforce on Nature-related Financial Disclosures (TNFD)

Their mission is to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks, with the ultimate aim of supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.

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