



THE 1.5°C BUSINESS PLAYBOOK

For companies with a mission
to change the world

EXPONENTIAL
ROADMAP INITIATIVE

RACE TO ZERO

Version 2.0

This playbook is supported and used by some of the most influential and innovative companies in the world with a combined yearly revenue of 900 billion dollars.

**EXPONENTIAL
ROADMAP** INITIATIVE

RACE TO ZERO

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INTRODUCTION

Climate change is already today causing severe harm to societies and the global economy. Evidence shows that humanity is taking grave risks with the stability of Earth's life support systems if global average temperatures continue to rise.

The 1.5°C ambition means to stay below 1.5°C or otherwise minimize any overshoot in temperature and return back to pre-industrial levels as soon as possible to decrease the risk for irreversible climate tipping points.*^{40, 49} To achieve that, global greenhouse gas emissions[†] should halve by 2030 from a 2020 baseline to reach near zero by 2050. At the same time, natural carbon sinks and removal technologies must be scaled up. The world is not yet on

the right trajectory which increases the risk of dangerous climate change requiring even more dramatic reductions. Doing this will require the fastest economic and societal transition in history – but one which is both necessary and achievable. This transition will also bring significant benefits ranging from reduced biodiversity loss and pollution to improved health and economic development.^{1,3}

It is critical to mobilise the entire business sector for the 1.5°C ambition to halve emissions by 2030. Businesses must contribute in four ways. First, by rapidly reducing their own emissions. Second, by reducing emissions in their value chains. Third, by providing climate solutions (products, services and projects) that enable others to avoid and remove emissions. Finally, by accelerating climate action in society and helping to protect and restore nature.

* The Greenland and West Antarctic ice sheets collapse, widespread abrupt permafrost thaw, collapse of convection in the Labrador Sea, and massive die-off of tropical coral reefs becomes likely already at 1.5°C warming.

† "greenhouse gas emissions" are also referred to as "emissions" in Business Playbook



WHO IS THIS PLAYBOOK FOR?

This is a handbook for CEOs, board members, managers and employees who want to prepare for the fastest economic transition in history – and help drive it.

It is developed for companies and organisations of all sizes that want to align with the 1.5°C ambition through concrete action. It contains solid guidelines for companies of all sizes to set climate targets and strategies, to plan, take action and disclose results.

It focuses on **simplicity** and **speed**, is grounded in the latest science and based on experiences from world leading experts and companies. The playbook can be used for strategic planning, business development and target setting. It is also useful for benchmarking performance, identification of key gaps and as a framework for impact reporting.

It is compatible with existing standards and criteria from initiatives such as the UN-backed Race to Zero campaign's leadership criteria 3.0⁵⁰, Greenhouse Gas Protocol (GHG Protocol)⁵, Science Based Targets initiative (SBTi)⁶, CDP⁷ and the Mission Innovation's Net Zero Compatible Innovations Initiative.⁹

The climate crisis is not only the most urgent threat to society today, but is also directly linked with other acute threats to nature: wildlife, water, land and oceans. The aim of this Playbook is to ensure that climate goals and action also support the protection and rewilding of nature – for human prosperity and equity.³⁰

By implementing the strategies in this playbook, companies will also help address the UN Sustainable Development Goals.^{1,10}

CARBON LAW

The IPCC Special Report on Global Warming of 1.5°C¹ concluded that we need to keep temperature rise to a maximum of 1.5°C to avoid high risk of catastrophic consequences for people and nature^{1,49}. To do so, the world needs to halve emissions every decade by 2050 from a 2020 baseline, which amounts to a year-on-year reduction rate of 7%. This is called the Carbon Law.² As a simple rule of thumb it can be applied to companies, cities, nations and citizens. Since the Carbon Law outlines the global average it must be viewed as a minimum ambition and the wealthiest should go fastest. Therefore, companies acting in line with the 1.5°C ambition should strive to become net zero by 2040 at the latest, and acknowledge that this is an intermediate step towards absolute zero and net negative emissions. Although positive

trends can be identified, global emissions are still increasing and not yet following the required 7% yearly reduction trajectory. Starting the first halving after 2020 will require a faster reduction rate than 7%.

To halve emissions every decade is a huge challenge but also an enormous business opportunity. The first halving is the biggest, but for many companies it is the easiest.

Net Zero Definition: State reached by an organization that has reduced its value chain emissions (scope 1, scope 2 and scope 3 emissions) following science-based pathways, with any remaining residual greenhouse gas (GHG) emissions being fully neutralized by permanent or like-for-like removals exclusively claimed by that organization. The term “residual” refers to residual emissions that remain technically unfeasible to be eliminated. Such residual emissions shall not exceed 10% of baseline emissions.

Definition based on ITU L.1471³⁴ which is based on [b-RtZ Criteria 3.0]³ and [b-SBTi Net Zero]⁴⁶.

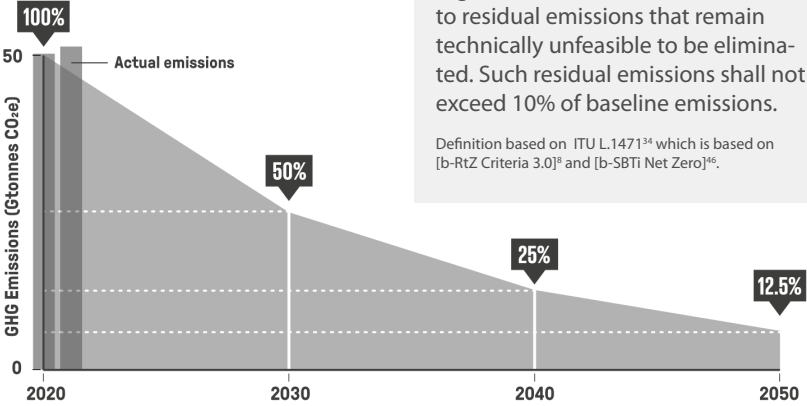


Figure 1. The Carbon Law – halving global greenhouse gas emissions every decade. The estimated total greenhouse gas emissions in 2019 was 54 gigatonnes. Due to the COVID-19 pandemic, emissions decreased by 5.4% in 2020. However, in 2021 emissions rebounded again by 4.9%. This means that reductions during the remaining years of this decade need to exceed 7% per year in order to keep within the required carbon budget.⁴⁷

PLANETARY STEWARDSHIP IS THE FUTURE

People want to become better planetary stewards. A recent study finds that 83% of people in G20 countries are willing to do more to halt climate change and protect and regenerate nature.⁵⁷ This is part of a wider societal trend towards planetary stewardship that includes companies, cities and politicians. This momentum means it is likely that the decade to 2030 will see the fastest economic transition in history: a huge market opportunity.

Several forces are combining to accelerate transformation towards planetary stewardship:

- Global movements like Fridays For Future have changed the conversation and opened up the political space for more transformational action.
- Climate emergencies declared in 2,252 jurisdictions and local governments covering 1 billion citizens, and also the European Parliament.¹⁵
- The global energy crisis will accelerate the clean energy transition.

More countries are realising the importance of the scale of energy security offered by clean energy.

- The global pandemic has shown behaviour and business models can change rapidly such as the adoption of on-line meetings.
- 1050 cities, 5500 businesses, and 450 of the largest financial institutions have committed to become net zero by 2050 at the latest through the UN-backed Race to Zero campaign. Collectively the Race to Zero actors represent 35% of global CO2 emissions and over 50% of global GDP.
- Companies representing over one third of global market capitalization have set science-based emission reduction targets with the Science Based Target initiative.
- The price of climate solutions is falling exponentially and this trend will continue. The best option for the climate is now often cheaper than other alternatives. In 2021, renewables became the world's cheapest form of energy. This is an important tipping point which creates positive feedback loops driving rapid scaling.

Similar disruption is happening in the transportation, building and food sectors.

- Politicians and businesses increasingly recognise the importance of nature in reaching climate goals. The most progressive companies are exploring joint climate and nature strategies: net zero and nature positive. The European Union has proposed a Nature Restoration Law, targeting restoration targets for 20% of EU land and sea areas by 2030. During the negotiations at COP26, 100 world leaders pledged to end deforestation by 2030, including 19 billion USD to combat forest loss⁵⁶. These are important steps in the right direction, but still fall short of what the science requires to achieve the 1.5°C ambition⁴⁸.
- The finance sector is waking up to the systemic risks of climate change. The Task Force on Climate-Related Financial Disclosures¹⁶, Glasgow Financial Alliance for Net Zero⁴¹ and the UN-convened net zero Asset Owner Alliance³⁸, are examples of initiatives with the purpose of transitioning investment portfolios to net zero in line with 1.5°C. Moreover, the EU is implementing directives for corporate sustainability reporting (CRSD) and a taxonomy which, despite specific shortcomings, will help investors and companies make informed investment decisions on environmentally friendly economic activities. This is expected to have a major impact on behaviour of companies and financial institutions.

- Companies that build climate leadership into their core strategies seem to be outperforming those that fail to do so^{52,53,54,55,20,21} and it also impacts market valuation. As an example, Tesla, which has a mission to “accelerate the world’s transition to sustainable energy”, was worth more than Toyota, Volkswagen, Daimler, BYD and GM combined in march 2021.

Exponential Roadmap

The Exponential Roadmap highlighted 36 key solutions that together can halve global emissions by 2030. These solutions are market-ready, they are affordable (like renewable energy), can be scaled rapidly (like electrical vehicles) and can save money (like energy efficiencies). For businesses, reducing greenhouse gas emissions and providing solutions that help customers and society to cut their emissions opens up new exponential growth opportunities and an opportunity to reduce costs and increase performance and profitability.^{12,13,14}

SETTING A FOUR-PILLAR CLIMATE STRATEGY

This guide focuses on four pillars that need to be addressed in a company's climate strategy to align with the 1.5°C pathway.

Pillar 1 focuses on a company's activities to reduce its own emissions,* aligned with a 1.5°C pathway.

Pillar 2 focuses on a company's activities to reduce its value chain emissions,† following the same trajectory.

Pillar 3 focuses on the company's impact in society through the use of its products and services. It shifts the focus from only reducing the footprint to also providing solutions. Such a shift requires the alignment of the company's vision, strategy, value proposition, and customer offerings with the 1.5°C ambition. It means shifting the portfolio of offerings towards solutions (products and services) that help customers and others to avoid and reduce emissions, further enabling sustainable lifestyles and consumption, and suppressing products with an adverse climate impact.

Pillar 4 describes how to contribute to the 1.5°C and net zero ambition beyond the company's own business and value chain. This means accelerating global climate action by sharing examples and scaling best practices through collaboration with other industry leaders. It also includes influencing policies and engaging industry associations to accelerate climate action, making climate and nature contributions beyond the value chain and helping management and employees to adopt sustainable practices.

The pillars should be integrated into a company's iterative planning cycle, starting by measuring and analysing the current situation, setting targets, establishing plans, and then moving to implementation. When results have been measured and disclosed, corrective actions taken and strategy re-evaluated, the first cycle is completed.

A comprehensive approach including all pillars is essential but the priorities and implementation will vary. Companies should be aware that acting on only some of the pillars will not be sufficient to align with 1.5°C and could also be considered greenwashing by the public.

* Own emissions in this context include direct emissions from own activities (scope 1) and indirect emissions from purchased energy (scope 2) as described in the Greenhouse Gas Protocol.

† Value chain emissions is described as scope 3 emissions in the Greenhouse Gas protocol standards including upstream and downstream emissions.

THE 4 CLIMATE PILLARS



Visual design by TND: Christina Ruegg and Jakob Trollbäck who designed the Sustainable Development Goals.

PILLAR

1

Reduce your own emissions

Target net zero by 2040 and first halving of emissions before 2030. Measure, set strategy and assign resources.

Plan and take action to reduce emissions from facilities, vehicles, production processes, electricity, steam, cooling and heating. (scope 1 and 2)

Assess and analyse scope 1 and 2 emissions and results of reductions. Publicly report on your results and communicate in a responsible way.

PILLAR

2

Reduce your value chain emissions

Target net zero by 2040 and first halving of value chain emissions by 2030. Measure, set strategy and assign resources.

Plan and take action to collaboratively reduce value chain emissions from purchased products and services, transport and product use. Request suppliers and customers to take action in line with the 1.5°C and net zero ambition. (scope 3)

Assess and analyse scope 3 emissions and results of reductions. Publicly report on your results and communicate in a responsible way.

SET TARGET AND STRATEGY

PLAN AND ACTION

REPORT AND COMMUNICATE

PILLAR

3

Integrate climate into your strategy

Set targets to shift your portfolio towards climate solutions that help avoid and remove emissions. Integrate climate into your vision, mission, strategies, products, services and R&D roadmaps.

Plan and take action to avoid emissions in society by shifting your portfolio towards solutions that can deliver on human needs in sustainable ways. Explore business models that support resource-efficient and circular flows of resources, and promote sustainable lifestyles.

Assess and publicly disclose the climate and sustainability impact of your solutions portfolio and how it is evolving, using robust methodologies. Communicate responsibly.

PILLAR

4

Accelerate climate action in society

Set targets and strategy to contribute to the global 1.5°C and net zero ambition in society beyond your value chain.

Influence policy and industry organisations, support business model and technology innovation, and scale best practices through collaboration with other industry leaders.

Fund projects that protect and restore nature, store carbon and avoid emissions in society.

Assess and publicly disclose your impact on society and nature. Communicate responsibly



SET TARGET AND STRATEGY



PLAN AND ACTION

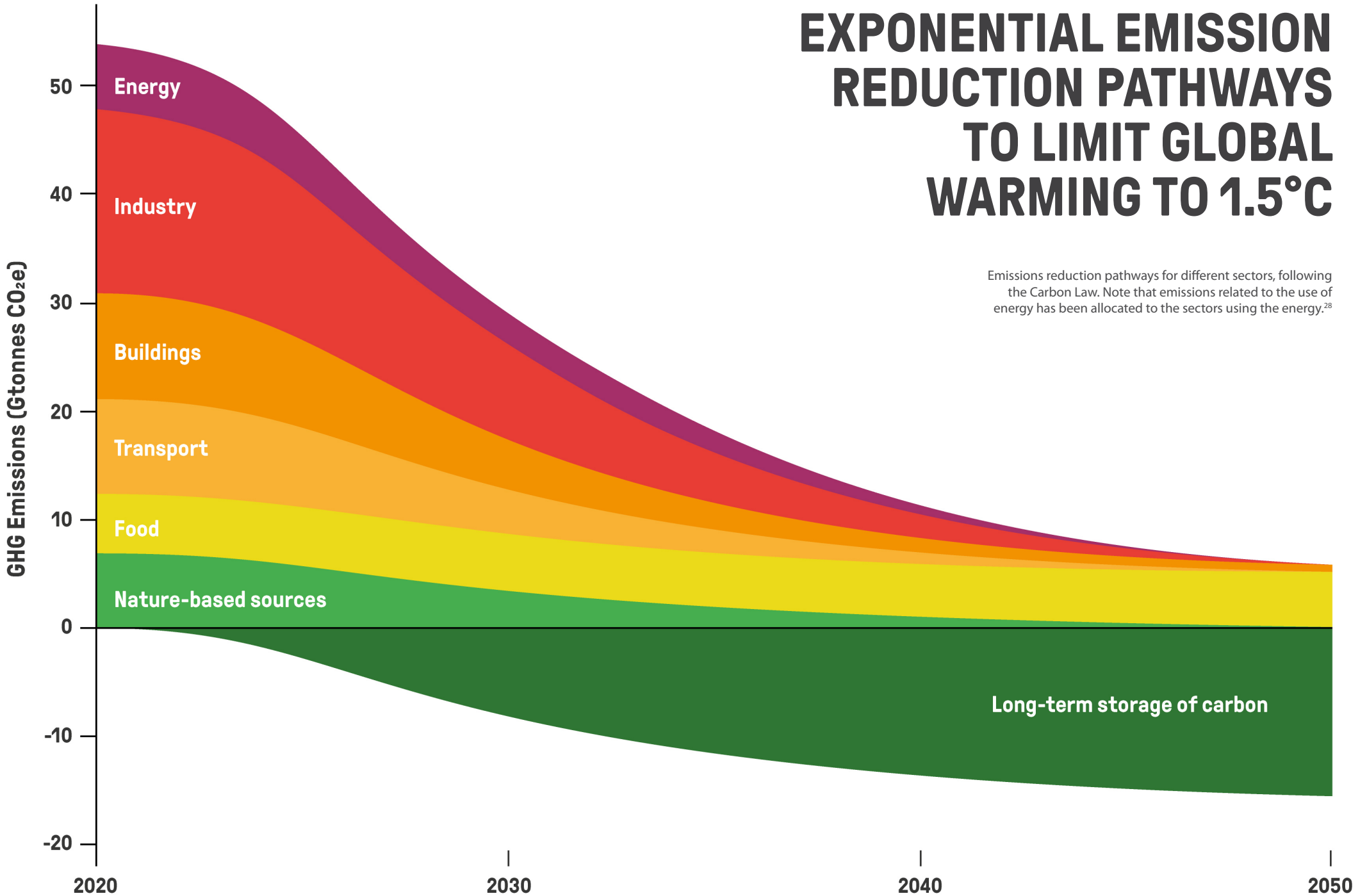


REPORT AND COMMUNICATE



EXPONENTIAL EMISSION REDUCTION PATHWAYS TO LIMIT GLOBAL WARMING TO 1.5°C

Emissions reduction pathways for different sectors, following the Carbon Law. Note that emissions related to the use of energy has been allocated to the sectors using the energy.²⁸



BECOME A CLIMATE LEADER – COMMIT TO THE 1.5°C AMBITION

Action begins by acknowledging the climate crisis, publicly committing the company to align with the 1.5°C and net zero ambition and assigning the resources needed to achieve the climate goals. This requires climate leadership from top management. But commitment is also about democratising climate work to ensure that all employees can contribute, and identifying and empowering potential climate leaders across the organisation.

ACTIONS

- Commit to the 1.5°C ambition by:
 - » doing your utmost to halve emissions across your own business and across your value chain by 2030 or earlier.
 - » reaching net zero* or absolute zero emissions by 2040, preferably sooner.
 - » integrating climate in your strategy and into your portfolio of products and services.

* Ensure to refer to the science aligned definition of net zero at page 5. Reaching a state of net-zero emissions for a company means to follow or exceed the carbon law, reduce absolute emissions by at least 90% and counterbalance the remaining residual with permanent or like-for-like carbon removals. Compensation should not be applied to achieve net zero, but companies are encouraged to fund climate solutions such as protection and restoration of nature outside their own value chain during the transition to net zero.

- » accelerating climate action in your wider role in society including protection and restoration of nature.
- Make an assessment of your current emissions, carbon risks, and climate business opportunities and decide on strategy.
- Assign responsibilities, mandate and resources.
 - » e.g. create a climate transformation programme with business development, R&D, sourcing and sales executives, with a direct line to the top leadership and board.
- Start to measure and publicly disclose your company's greenhouse gas emissions, climate action and results annually.
- Establish key performance indicators (KPIs) for climate with the same importance as financial indicators. Integrate climate as a priority parameter and target for your purchasing, R&D, business development, finance and other departments.
- Connect remuneration for executive management and employees to climate-related KPIs.

- Educate your employees about climate change, empower them to integrate a climate perspective into all processes, and to drive climate action and innovation in their daily work.
- Join the UN-backed Race to Zero campaign through one or several of the partner initiatives aligned with the 1.5°C ambition such as:
 - » Exponential Roadmap Initiative
 - » SME Climate Hub
 - » Science Based Targets initiative and Business Ambition for 1.5°C
 - » Net-Zero Asset Owners Alliance

Race To Zero⁸

Race to Zero is a UN-backed global campaign to rally leadership and support from businesses, cities, regions, investors for a healthy, resilient, zero carbon recovery that prevents future threats, creates decent jobs, and unlocks inclusive, sustainable growth.

At the date of this publication, the campaign mobilises a coalition of leading net zero initiatives, representing 1,049 cities, 67 regions, 5,235 businesses, 441 of the biggest investors, and 1,039 Higher Education Institutions and is constantly growing. These 'real economy' actors join 120 countries in the largest ever alliance committed to achieving net zero carbon emissions by 2050 at the latest. Collectively these actors now cover nearly 25% of global CO₂ emissions and over 50% of global GDP.

The Exponential Roadmap Initiative³²

The Exponential Roadmap Initiative (ERI) is a global climate initiative that brings together innovators, disruptors and transformers taking action in line with 1.5°C. ERI is the leading advocate of the Global Carbon Law; halving emissions each decade while at the same time protecting and restoring nature.

Currently, ERI gathers companies and organisations, representing about 880 billion USD in yearly revenue and 1.7 million employees. Its purpose is to accelerate exponential climate action and solutions through innovation projects, with the mission to contribute to halving greenhouse gas emissions by 2030.

SME Climate Hub³⁴

The SME Climate Hub is a global initiative that empowers small to medium-sized companies to take climate action and build resilient businesses for the future. The SME Climate Hub provides SMEs with access to free tools and resources to support their net zero journeys.

With tools for climate education, emissions calculations and reporting, SMEs can make strategic and impactful reductions, track their progress, and demonstrate climate leadership. Funded by the Exponential Roadmap Initiative, We Mean Business Coalition and the UN-backed Race to Zero campaign, the SME Climate Hub is the largest Race to Zero partner initiative in terms of number of companies with close to 5000 committed SMEs.

Business Ambition for 1.5°C and Science Based Targets Initiative (SBTi)⁴

The Science Based Targets initiative (SBTi) drives climate action in the private sector by enabling organizations to set science-based emissions reduction targets.

By signing up to the Net Zero Standard and committing to set a Science Based target in line with a 1.5°C and net-zero future, companies will also be recognized as a member of the Business Ambition for 1.5°C and Race to Zero Campaign.

Net-Zero Asset Owners Alliance³⁸

The UN-convened Net-Zero Asset Owner Alliance is an international group of 74 institutional investors with 10.6 trillion USD in assets under management, committed transitioning its investment portfolios to net zero greenhouse gas emissions by 2050.

Financial institutions joining the Race to Zero can also join the Glasgow Financial Alliance for Net Zero⁴¹ (GFANZ), focusing on three key areas: net-zero transition planning for financial institutions, mobilising capital to emerging markets and developing economies and net-zero public policy.

PILLAR 1. REDUCE YOUR OWN EMISSIONS

1

To be aligned with the 1.5°C ambition, the minimum requirement is to halve your own emissions at least every decade. These emissions are referred to as scope 1 and 2 emissions in the Greenhouse Gas Protocol Corporate Standard.⁴¹ They include emissions from in-house sources such as facilities, vehicles and internal production processes, as well as emissions from purchased electricity, cooling, heating and steam. It is also recommen-

ded to include emissions from business travel in Pillar 1 even though they are formally part of scope 3, since they are directly controlled by the company. Your own company emissions may represent a small part of the total but are critical to reduce since these are under the company's direct responsibility. For many companies, a reduction of scope 1 and 2 emissions by 90% can be achieved by 2030.

PLAN

- Map out your own emissions and plan reductions,[†] if you haven't already done so. Identify the main sources of emissions – your hotspots – and make sure your plans focus on how to mitigate these.
- Decide on your base year. A base year will be used for comparison, to show progress towards emissions reductions goals.
 - » The base year is normally the most recent year for which data is available and the selected year shall not be more than two years back.[†]
 - » Companies that have already started their 1.5°C aligned emissions reduction and reduce at the annual pace of at least 7%, may use another base year, for instance to align with an existing Science Based Target.

* The mapping should also include emissions associated with subsidiary companies.

† In case of unusual fluctuations of GHG emissions that makes such a base year non-representative (such as during the pandemic), businesses may refer to the year before or average over the most recent years when deriving the base year.

- » Historical emissions reductions deserve acknowledgement and can be highlighted, but they cannot be counted towards the next halving of emissions.
- Set your reduction targets, both short-term and long-term, including a net zero target by 2040 at the latest, but preferably earlier.
 - » Your minimum pace should be to halve absolute emissions every decade, but preferably faster. Halving in ten years means a 7% year-on-year reduction. Halving in five years equals 13% annual emissions reductions and halving in three years corresponds to a 21% annual emissions reduction rate.
- Decide in which order to reduce emissions for different sources and develop a transition plan on how to reach your targets.
 - » Start immediately with the “low-hanging fruit” which are economically attractive and bring other co-benefits. Energy efficiency, shifting to renewable and fossil-free energy, optimizing office space, transportation, and business travel emissions are often good candidates, but the priority will be sector-dependent.
 - » Set specific targets for your emission hotspots, such as “100% renewable energy by 2025” and “halving business travel emissions in three years”.
- Disclose your company’s own emissions, targets and reduction plans as part of your annual public reporting. Clearly explain any slower pace than halving every decade.*
- Evaluate results, take corrective actions and update your plan on a yearly basis.

* Companies that provide solutions which avoid or remove emissions as their core business may set a target to halve their intensity (total emissions divided by value added or per economical unit), instead of halving absolute emissions and show that their growth is 1.5°C compatible. To apply this rule, such solutions should at least remove or avoid 50% of emissions compared to the business as usual solution and represent 90% of the company’s total sales.

KEY ACTIONS – PILLAR 1

- Svtart the switch to renewable and fossil-free energy for all possible processes, buildings and sites with the goal to reach 100% renewable energy as soon as possible, striving towards balancing your energy usage on a 24/7 basis.
 - » Install on-site renewable electricity production and storage and thermal solutions.
 - » Buy renewable energy through power purchase agreements that ensure additionality and thereby contribute to expanding production. If renewable electricity is not available in one market, work with other stakeholders to influence authorities.
 - » Monitor how the energy consumption and the use of renewables are matched e.g. at an hourly level.
- Improve energy efficiency for buildings through retrofitting and digital automation.
- Improve energy efficiency in factory production processes and machines by investing in new technology and digital automation.
- Require renewable energy, low-carbon cooling, heating, ventilation and refrigerants for all buildings you operate in.
- Optimise the use of building space in all operations, in order to reduce emissions and costs.
- Implement a plan to systematically reduce resource and material waste in alloperations.
- Require low emissions buildings and clean grid energy when expanding or establishing new businesses in a region.
- Move towards a low-emission vehicle fleet, and implement a policy requiring 100% electrical or other low-emission owned and leased company vehicles.
- Decide and implement policies to reduce emissions from business travel by shifting to low-carbon alternatives including virtual meetings (for example by a "virtual first" and "train second" policy).
- For relevant sectors, implement a plan to halve methane emissions by latest 2030.

PILLAR 2. REDUCE YOUR VALUE CHAIN EMISSIONS

2

Value chain emissions include all emissions “outside the company walls”. They often represent the largest share of a company’s total footprint and must therefore be addressed.

Value chain emissions are emissions from upstream and downstream activities associated with the operations of the reporting company, and are referred to as scope 3 emissions by the GHG Protocol.⁵ Upstream activities include emissions all the way from raw material extraction and downstream activities include customer final use and end-of-life. The largest emission sources in this category are often **purchased goods and services** and the **use of sold products**, but

proportions vary between sectors and companies.

You should work actively to drive down value chain emissions. This can be done in many ways – examples of mechanisms include procurement guidelines, and supplier code of conduct criteria, changes in the design of products, collaborations with suppliers and customers, and reassessment of business models and investments.

As an example, partners of the Exponential Roadmap Initiative have founded the 1.5°C Supply Chain Leaders which work across sectors to develop strategies and tools for supporting their suppliers to reduce emissions⁴¹.

PLAN

- Map out the emissions associated with your value chain to understand which are the most substantial and start tracking them systematically. Strive to measure all significant emissions categories so that no more than 5% of total emissions are omitted.
- Set a target for the first halving of absolute value chain emissions, including a target to reach net zero by 2040 at the latest, but preferably earlier.
 - » Apply the same base year as for your own company’s emissions (scopes 1 & 2).
 - » Your minimum goal to align with 1.5°C should be to halve emissions by 2030, but preferably faster.
 - » Break down the plan into yearly targets and milestones.

- Decide in which order to reduce emissions from different sources, and develop a plan on how to reach the targets.
- Disclose value chain emissions, targets and reduction plans as part of your annual public reporting. Clearly explain any slower pace than halving each decade.*
- Evaluate results and update your targets annually if necessary.

* Companies that provide solutions which avoid or remove emissions as their core business may set a target to halve their intensity (total emissions divided by value added or per economical unit), instead of halving absolute emissions and show that their growth is 1.5°C compatible. To apply this rule, such solutions should at least remove or avoid 50% of emissions compared to the business as usual solution and represent 90% of the company's total sales.



KEY ACTIONS – PILLAR 2

- Ask your large and small suppliers to commit to the 1.5°C ambition by joining an initiative within the UN-backed Race to Zero campaign, to set science-aligned targets and take action to halve their emissions before 2030 and to monitor their progress.
 - » Integrate climate action at the highest level in the sourcing and purchasing functions, to facilitate halving of supplier emissions by 2030.
 - » Include evaluation of suppliers' climate targets and performance in your procurement criteria and code of conduct, and collaborate with other industry partners to strengthen and align purchase requirements.
 - » Use best practise guidance for how to work with your large and small suppliers* to achieve your common goals.
- Help build 1.5°C aligned, circular and net zero value chains by collaborating strategically with suppliers and customers.
- Invest in projects supporting suppliers within your supply chain to accelerate transformation towards e.g. renewable energy.
- Encourage your customers to set targets and take action to halve their emissions by 2030 towards net zero and to join an initiative within the UN-backed Race to Zero campaign.
- Integrate strong climate and circularity criteria at the heart of all your innovation and development processes to extend life span of sold products, require less material, use recycled and low-carbon materials, and secure end-of life material recycling.
- Evaluate and improve the energy efficiency and resource efficiency of your own products and services, and optimize them for use with renewable energy.
- Reduce emissions from commuting through promoting and sponsoring low-carbon travel, and enabling employees to work from local green office hubs or at home.
- Whenever possible, provide and/or promote the selection of plant-based food.
- Take action to eliminate deforestation in your value chain by 2025 at the latest.†
- Set targets and take action towards regenerative agriculture and sustainable forest practices in all relevant parts of your value chain.*
- Evaluate and take action to reduce the footprint of your financial supply chain - your cash, investments, and pension funds - and ensure management of financed emissions is in line with your 1.5°C commitment‡.

* Such as the Supplier Engagement guide³¹ and asking small suppliers to join the SME Climate Hub³¹

† Mainly relevant for food, land and agriculture sectors.

‡ Specifically for banks and financial institutions. For other companies this is included in Pillar 4.

PILLAR 3. INTEGRATE CLIMATE INTO YOUR STRATEGY

3

Solutions which avoid emissions and remove carbon will need to scale exponentially. This includes renewable energy and storage, plant-based food, regenerative agriculture, energy-positive buildings, sharing of vehicles, space and things, low-carbon materials, and circular usage of materials.

Most industries must be fundamentally redesigned to be decarbonised in line with a 1.5°C pathway. Business models will need to change from ownership to usership, from product-based to service-based and from linear to circular – enabled by digital technologies.

Your business proposition is the biggest determining factor for your contribution to a 1.5°C planet. For example, you can create new fossil-free materials, renewable energy solutions, provide EV sharing services, and more to replace carbon-intensive alternatives. You can help shift consumer patterns in a sustainable direction by

guiding people to understand their lifestyles and providing solutions to the most effective and suitable sustainable behaviours/choices, such as product renting, sharing and repairing. If your services and products are influencing consumer and company decisions – such as social and e-commerce platforms, media, advertising and management consultancy – you can both enable and encourage customers to make decisions that are positive for the climate. As a company, you will want to be on the forefront of this change to safeguard your competitive advantage. This may require transforming your portfolio and business model.

Map out a future of your company, which supports a positive development of climate, nature and people. Define what it would look like and what needs to be achieved in order for your company to contribute. Find business opportunities by exploring new products,

services, offerings, business models and addressing front-runner climate-conscious customer groups. Identify business

practices that need to be phased out to reduce adverse climate impacts.

KEY ACTIONS – PILLAR 3

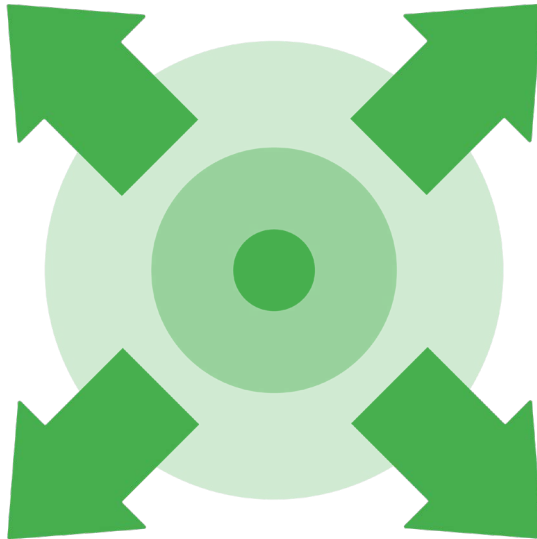
- Update your company's vision and mission statement to reflect your commitment to contribute to the 1.5°C ambition by integrating climate and nature.
- Integrate climate at the highest level in board, strategy, business development and product management functions to ensure incorporation in decision making, business plan and roadmaps.
- Assess and analyse if and how your value proposition, solutions and client portfolio, algorithms and business model are aligned or not with the 1.5°C and net zero ambition.
- Start transforming your portfolio towards climate solutions which help your customers to avoid or remove emissions and help consumers to achieve sustainable lifestyles. Phase out products, services and clients that accelerate emissions.
- Start transforming your business model to one which is service-based and circular, with higher efficiency and minimum emissions. If your value proposition includes materials, move towards need-based and resource-efficient circular models that reduce, reuse and recycle materials.
- Encourage and enable purchase and investment decisions that are positive for the climate and in line with the 1.5°C ambition, never against. This is specifically important if your services are influencing consumer and company decisions – such as digital platforms, advertising, finance and management consultancy.
- Integrate your climate strategy into your services, products and project roadmaps and ensure all new solutions will be compatible with the 1.5°C ambition.
- Consider making qualitative and quantitative assessments of the climate impact of using your solutions, and set measurable goals for accelerating climate solutions. This should be done in a structured and transparent way, following robust frameworks and assessment principles.
- Make climate an integral part of your investment procedures by including a carbon price in your decision making process.

PILLAR 4. ACCELERATE CLIMATE ACTION IN SOCIETY

4

Becoming a climate leader means using your network and wider sphere of influence to support and accelerate exponential climate action and solutions beyond your own business and value chain. This includes:

- Demanding policy changes to align with the 1.5°C ambition, collaborating with customers, suppliers, peers, investors, government, cities, research organizations and NGOs to accelerate ambition, action, best practices and solutions and contributing to climate awareness among customers and employees
- Contributing to funding of climate solutions and projects to protect and restore nature, to avoid emissions from energy and land-use, and to scale carbon removal technologies.



ACTIONS – PILLAR 4

- Evaluate how your organization and funding most efficiently can contribute to scale-up of the 1.5°C ambition and climate action in society as a whole and decide on strategy.
- Integrate a 1.5°C climate commitment in the public affairs function of your company.
- Integrate a 1.5°C climate commitment in all corporate policies, including those related to finance and financial investments.
- Ensure that trade and business organizations that you are a part of are aligned with the 1.5°C ambition – or leave them.
- Engage in lobbying and advocating for 1.5°C aligned policies through influencing of local and national policymakers to step up climate action. This can be done both by your company alone, and in collaboration with other organizations for maximum impact.
- Collaborate with industry peers, customers, suppliers and other partners to:
 - Share best practices, tools and roadmaps to accelerate halving emissions towards zero.
 - Enable scaling of key climate-enabling technologies and innovations.
- Share your expertise and contribute to demonstrating climate solutions nationally and internationally to accelerate adoption.
- Advocate for regulatory bodies to promote industry-wide climate action.
- Encourage and help your management, employees and owners start halving their own emissions and adopt sustainable lifestyles, e.g. through sharing educational materials, personal climate calculators and supportive policies.
- Evaluate and take action to reduce the footprint of your financial supply chain – your cash, investments, and pension funds – and ensure management of financed emissions is in line with your 1.5°C commitment.*

* For financial institutions this is part of Pillar 1-2.

FUNDING OF NATURAL AND OTHER CLIMATE SOLUTION PROJECTS BEYOND THE VALUE CHAIN

It is important that businesses causing the emissions today take responsibility to accelerate investments in natural climate solutions and solutions that avoid or remove carbon beyond their own business and value chain.

Companies shall fund climate projects on their journey towards net zero*, for instance by purchasing high-quality carbon credits to address all or some of their unabated emissions, and companies are also encouraged to address historic emissions. Projects may be nature-based, or support the development of new technological carbon removal methods and technologies.

Companies are encouraged to create a financial mechanism to support climate projects, for example, by implementing an internal carbon fee for each ton they emit and use that money to fund projects.

Purchasing high-quality carbon credits is one way of supporting climate projects, but many credits issued in the past have been shown to be ineffective. Other options include funding NGOs and grassroots organizations working with climate and supporting the research and development of new carbon removal methods.

* At net zero, any residual emissions should be counterbalanced with an appropriate amount of permanent or like-for-like removals from climate projects.

Investments in natural climate solutions is considered a priority as they channel funding to critically under-funded climate mitigation efforts, provide climate accountability, and can contribute to global goals on nature protection. Investments in natural climate solutions must be high-quality and rights-based, contribute to local livelihoods, conserve or enhance biodiversity and other ecosystem services, and recognize the rights of Indigenous People and local communities. Moreover, measures must be taken to safeguard their lasting effects.

Funding of climate projects beyond the value chain should only be used as a complement to the reduction of value chain emissions and shall not be used to claim net zero. Hence, this shall not be a substitute for reducing emissions and creating climate solutions to avoid emissions. To ensure impact, it is important to carefully decide what climate projects to support. If carbon credits are purchased, we recommend using certified carbon credit projects which should be aligned with the Sustainable Development Goals and meet criteria for high-quality credits.

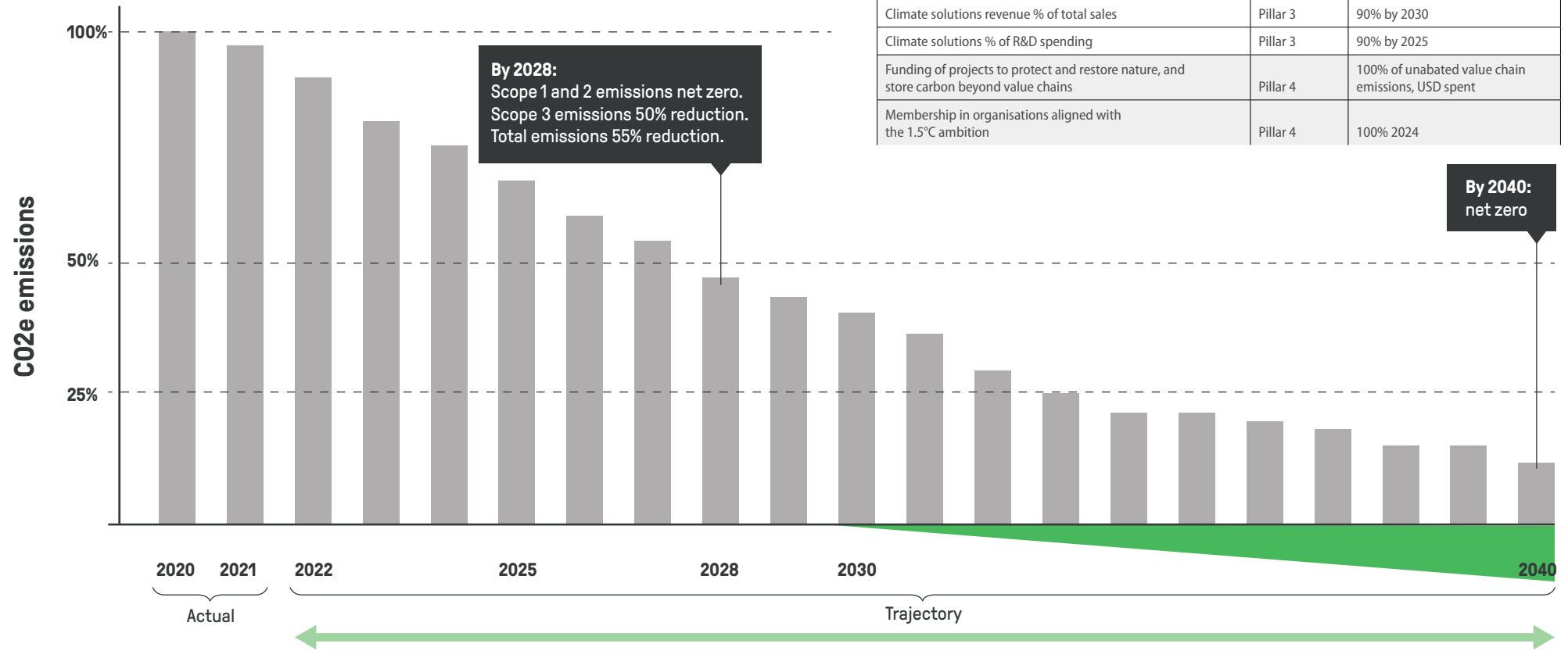
Companies should disclose their annual spending (and carbon price applied) on external climate projects in absolute terms and in relation to their unabated value chain emissions and information about what projects are supported.

COMPANY EXAMPLE*

The diagram describes a fictional company example applying a 2020 base year, showing actual emissions, near-term and net zero emission targets, target trajectory and carbon removals. The table displays example of forward-looking key performance indicators (KPIs) applied to drive implementation of targets.

* Note that this example focus on pillar 1 and 2 (scope 1,2,3) and partly pillar 4 but does not include provisioning of climate solutions (pillar 3).

- Emissions from scope 1, 2 and 3.
- Permanent or like-for-like removals
- Funding of a portfolio of Natural Climate Solutions and other projects avoiding and storing emissions beyond the company's value chain, corresponding with the unabated value chain emissions, starting from 2022.



EXAMPLE OF KEY PERFORMANCE INDICATORS SUPPORTING OVERALL TARGETS	Pillar	Goals examples
Achieved emissions reductions since base year.	Pillar 1 & 2	55% by 2028, 90% by 2040
Renewable electricity	Pillar 1	100% by 2025
Renewable thermal energy	Pillar 1	100% by 2025
Electrified vehicle fleet using renewable energy	Pillar 1	100% by 2025
Recycled material (upstream supply)	Pillar 2	50% by 2025
Suppliers use of renewable energy	Pillar 2	50% by 2025, 100% by 2030
Number of suppliers aligned with 1.5°C and part of the Race to Zero	Pillar 2	90% by 2025
Customer alignment with 1.5°C and joined UN Race to Zero	Pillar 2	90% by 2025
Zero deforestation in supply chain	Pillar 2	100% by 2024
Regenerative agriculture in supply chain	Pillar 2	50% by 2025
Sustainable forestry in supply chain	Pillar 2	100% by 2028
Climate solutions revenue % of total sales	Pillar 3	90% by 2030
Climate solutions % of R&D spending	Pillar 3	90% by 2025
Funding of projects to protect and restore nature, and store carbon beyond value chains	Pillar 4	100% of unabated value chain emissions, USD spent
Membership in organisations aligned with the 1.5°C ambition	Pillar 4	100% 2024

REPORT AND COMMUNICATE

Reporting publicly on your direction, targets, emissions and emissions reductions (Pillars 1 and 2), progress in integrating climate in business strategy (Pillar 3) and societal action (Pillar 4) is an integral part of your 1.5°C commitment. This will be required by customers, investors, and increasingly by governments and other regulatory bodies, and it will help you to position your company as a relevant and serious climate leader.

Communicate your direction, effort, progress and challenges towards society as a whole, customers, suppliers, employees and investors, as well as other stakeholders. Communication on your company's climate action should be honest, truthful, transparent, not misleading, representative and based on the latest science. Further, companies should not only highlight their success, but also communicate on challenges and barriers, to inspire others and build credibility.

KEY REPORTING GUIDELINES

- Describe how climate change and the global net zero transformation, the associated opportunities and risks, and the necessary mitigation and adaptation, affect your organisation. Consider to also disclose climate risks and opportunities in accordance with the TCFD¹⁶ recommendations.
- Report in an open standardised format e.g. as an integrated part of your annual report, and via platforms such as CDP⁷ and the SME Climate Hub³² for small companies. Consider having your reporting audited by a third party.
- Disclose your targets and KPIs for the 4 Pillars: reduction of own emissions,^{*} value chain emissions,[†] climate solutions and societal action.
- Outline the transition plan for achieving your targets, the key challenges and emissions that are particularly hard to abate and the key innovation gaps. Describe how your plan is resourced and how you are working to overcome challenges.

* This can also include specific targets related to e.g. 100% renewable energy.

† This can also include specific targets related to supply chain alignment with 1.5°C and energy efficiency of products.

- If you have reported your emissions in previous years, state how emissions have changed compared to previous years, noting the reasons for change and explaining deviations from set targets and the corrective actions you are taking. In case you are not delivering at least 7% year-on-year reductions, it is particularly important to highlight the hard-to-abate emissions, the key blockers which need to be removed and to suggest collaborative actions required.
- Follow the GHG Protocol Standards⁵ and disclose annual emissions in tons of CO₂e. Strive to include all emissions (minimum 95% coverage) and describe emission sources qualitatively where data is lacking. Difficulties in measuring or reporting should never limit action, and if quantitative data is not available, a qualitative approach should be applied to estimate non-quantified emissions. Moreover, proxy data is preferred over exclusions.
 - » Clearly and separately report the emissions and emissions sources in each scope.
 - » For scope 3 categories that are not yet quantified, list them, give an estimate of how they contribute to the overall footprint and explain how you plan to quantify them in the future.
 - » Specify land-use change emissions, carbon capture and storage, and removals separately if applicable.
- Report on KPIs and concrete actions that have been taken to reduce your emissions by implementing the reduction measures of Pillars 1 (scope 1 and 2) and 2 (scope 3).
- Report on KPIs and concrete actions that have been taken to scale solutions which are reducing and avoiding emissions for customers and in society i.e. Pillar 3. Explain any deviation from set targets and the corrective actions you are taking. Any calculations of avoided emissions from solutions shall be presented separately from the Scope 1–3 emissions and all assumptions and the applied methodology shall be transparently stated.
- Report on your activities to accelerate climate action in society e.g. through influencing policy and funding of climate projects beyond your value chain. Disclose your work on the listed actions in Pillar 4.
- Report separately on your funding of climate projects beyond your value chain. Do not report purchased carbon credits as a deduction from your scope 1–3 emissions.

- » Clearly state the percentage of unabated emissions that are addressed and money spent on carbon credits and other funding of climate projects each year, including the internal carbon price applied.
- Disclose your trade and membership association affiliations, their alignment or misalignment with the 1.5°C ambition and your actions to ensure 1.5°C alignment across all policy and engagement activities.
- Report on adverse environmental impacts from your company on nature, aside from greenhouse gas emissions, such as soil degradation or biodiversity loss, and on how you plan to reduce and eliminate these.

ABOUT THIS PLAYBOOK

This playbook is developed by the Exponential Roadmap Initiative as a spin-off from the Global Carbon Law and the Exponential Roadmap. The purpose of the playbook is to help achieve a critical mass of companies aligned with the 1.5°C ambition and thereby accelerate exponential climate action. It is now backed and promoted by companies representing close to 1000 Billion dollars in yearly revenue. It was developed by experts from a number of contributing and supporting organisations during 2019, launched in 2020 (v 1.0), updated in October 2020. (v 1.1.1) and in September 2022 (v 2.0). Key updates in the 2.0

version include incorporation of UN Race to Zero criteria, net zero standard, policy alignment, climate solutions and natural climate solutions. It will be complemented by recommended guidelines, tools and company examples. The playbook will continue to be regularly updated, based on learnings from users, latest science and upcoming standards. All companies and organisations are welcome to support the playbook and the 4 pillar framework by using it, endorsing it and promoting it publicly.

REFERENCES

1. IPCC. Summary for Policymakers. In Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. Geneva, Switzerland: World Meteorological Organization, IPCC (2018). <https://www.ipcc.ch/sr15/>
2. J. Rockström et al., A roadmap for rapid decarbonisation. *Science* 355.6331, 1269-1271 (2017). <https://science.sciencemag.org/content/355/6331/1269>
3. Burke et al., Large potential in economic damages under UN mitigation targets. <https://www.nature.com/articles/s41586-018-0071-9.epdf>
4. Business Ambition for 1.5°C. <https://sciencebased-targets.org/business-ambition-for-1-5c>
5. The Greenhouse Gas Protocol: <https://ghgprotocol.org>
6. Science Based Targets initiative: <https://sciencebasedtargets.org>
7. Carbon Disclosure Project: <https://www.cdp.net/en>
8. UNFCCC Race to Zero campaign. <https://unfccc.int/climate-action/race-to-zero-campaign>
9. Mission Innovation: net-zero Compatible Innovations Initiative. <https://misolutionframework.net>
10. Sustainable Development Goals. <https://sustainabledevelopment.un.org/?menu=1300>
11. Lenton et al., Climate Tipping Points. Too risky to bet against. <https://www.nature.com/articles/d41586-019-03595-0>
12. J. Falk, O. Gaffney, et al. Exponential Roadmap. 1.5.1 (2020). www.exponentialroadmap.org
13. P. Hawken, Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming. Penguin Books, New York (2017). <https://drawdown.org>
14. A. Grubler et al., A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies. *Nature Energy* 3, 515–527 (2018). <https://www.nature.com/articles/s41560-018-0172-6>
15. Climate Emergency Declaration. <https://climate-emergencydeclaration.org>
16. Task Force on Climate-Related Financial Disclosures (TCFD). <https://www.fsb-tcfd.org>
17. UN-convened Net-Zero Asset Owner Alliance: <https://www.unepfi.org/net-zero-alliance/>
18. EU taxonomy for sustainable activities. https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en
19. Shareholder value is no longer everything. <https://www.nytimes.com/2019/08/19/business/business-roundtable-ceos-corporations.html>
20. Carbon Disclosure Project. CDP S&P 500 Climate Change Report 2014. <https://www.issuelab.org/resource/climate-action-and-profitability-cdp-s-p-500-climate-change-report-2014.html>
21. Business Ethics. Study Finds Sustainable Companies' Significantly Outperform Financially. <https://business-ethics.com/2011/11/14/1503-study-finds-sustainable-companies-significantly-outperform-financially/> (2011)
22. Haga Initiative. Business for active climate responsibility. Climate Action Profitable. A study on 200 companies' profitability and their climate efforts. <https://www.hagainitiative.se/files/Reports/climateactionprofitable.pdf> (2017)
23. Deloitte Insights. Leading the social enterprise: Reinvent with a human focus. 2019 Deloitte Global Human Capital Trends. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/human-capital/us-human-capital-leading-the-social-enterprise-reinvent-with-a-human-focus.PDF>
24. Business Ambition for 1.5°C Pledge. <https://www.unglobalcompact.org/docs/publications/Business-Ambition-for-1.5C-Pledge.pdf>
25. Exponential Business Initiative. www.exponential-business.org
26. Diagram from www.exponentialroadmap.org: Sectoral emission reduction pathways (through avoiding emissions and sequestering greenhouse gases) for halving global emissions every decade from 2020–2050 (Carbon Law). The pathways on the positive y-axis indicate emissions avoidance whereas on the negative y-axis they indicate ramping up natural sinks for greenhouse gas sequestration. According to this scenario, net-zero greenhouse gas emissions is achieved in 2039, and after that, greenhouse gas sequestration is greater than emissions. Note that the energy sector's emissions address only emissions related to the process of energy production (energy supply) and do not include electricity- and heat-related emissions in buildings, industry and the transport sector. In the food sector, solutions draw down emissions from 5.6 Gt in 2020 to 5.0 Gt (planetary boundary for food) in 2050. Note that the exponential mitigation curves for natural climate solutions are currently being updated in line with the Exponential Roadmap for Natural Climate Solutions.(C1)

27. 1.5 Degree Lifestyles <https://www.sitra.fi/en/publications/1-5-degree-lifestyles/>
28. Science Based Targets Network <http://sciencebased-targetsnetwork.org>
29. A Methodology for Assessing the Environmental Effects Induced by ICT Services.Part I-II <https://dl.acm.org/doi/10.1145/3401335.3401716>, <https://dl.acm.org/doi/10.1145/3401335.3401711>
30. Exponential Roadmap Initiative. <https://exponentialroadmap.org>
31. B Corp Collective. <https://www.bcorpclimatecollective.org>
32. SME Climate Hub. <https://smeclimatehub.org>
33. Climate Pledge. <https://www.theclimatepledge.com>
34. L.1471 : Guidance and criteria for information and communication technology organizations on setting net zero targets and strategies. <https://www.itu.int/rec/T-REC-L.1471-202109-I/en>
35. Corporate Standard, Greenhouse Gas Protocol <https://ghgprotocol.org/corporate-standard>
36. IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [MassonDelmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.J. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3–32, doi:10.1017/9781009157896.001
37. Realization of Paris Agreement pledges may limit warming just below 2°C. <https://www.nature.com/articles/s41586-022-04553-z>
38. Net zero Asset Owners Alliance. <https://www.unepfi.org/net-zero-alliance/>
39. SBTi Progress Report 2021. [SBTi Progress Report 2021 - Science Based Targets](https://www.sbtigroup.com/sbti-progress-report-2021-science-based-targets)
40. IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Lösschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Lösschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. In Press.
41. Glasgow Financial Alliance for Net Zero. <https://www.gfanzero.com/>
42. Supplier Engagement Guide: Practical guidance for 1.5°C aligned targets and action throughout global supply chains. <https://exponentialroadmap.org/supplier-engagement-guide/>
43. Corporate climate responsibility monitor 2022. Day, T., Mooldijk, S., Smit, S., Posada, E., Hans, F., Fearnough, H., Kachi, A., Warnecke, C., Kuramochi, T. and Höhne, N., 2022.
44. Mission Innovation: The Next Generation of Climate Innovation. https://www.misolutionframework.net/pdf/Next_Gen_Climate_Innovation.pdf
45. Mission Innovation: 21st Century Climate Innovation Assessment. https://www.misolutionframework.net/pdf/21st_Century_Climate_Innovation_Assessment_V0.9.pdf
46. The Net-Zero Standard, Science Based Target initiative. <https://sciencebasedtargets.org/net-zero>
47. Friedlingstein, P., Jones, M. W., O'Sullivan, M., Andrew, R. M., Bakker, D. C. E., Hauck, J., Le Quééré, C., Peters, G. P., Peters, W., Pongratz, J., Sitch, S., Canadell, J. G., Ciais, P., Jackson, R. B., Alin, S. R., Anthoni, P., Bates, N. R., Becker, M., Bellouin, N., ... Zeng, J. (2022). Global Carbon Budget 2021. Earth System Science Data, 14(4), 1917–2005. <https://doi.org/10.5194/essd-14-1917-2022>
48. The Exponential Roadmap for Natural Climate Solutions. Conservation International. 2022. www.conservation.org/roadmap
49. Exceeding 1.5°C global warming could trigger multiple climate tipping points. David I Armstrong McKay et al.
50. Race to Zero criteria 3.0 <https://climatechampions.unfccc.int/wp-content/uploads/2022/06/Race-to-Zero-Criteria-3.0-4.pdf>
51. PCAF. <https://carbonaccountingfinancials.com>
52. Value(s): Building a Better World for All. Carney, M. 2021.
53. Tomorrow's Economy: A Guide to Creating Healthy Green Growth. Stoknes, P.E. (2021)
54. Creating competitive advantage through sustainability. Grant Thornton. <https://www.grantthornton.global/en/insights/articles/creating-competitive-advantage-through-sustainability/>
55. Embedding sustainability into core strategy and business operations. Deloitte. www2.deloitte.com/content/dam/Deloitte/au/Documents/strategy/deloitte-au-con-embedding-sustainability-into-core-strategy-and-business-operations.pdf
56. COP26: World leaders promise to end deforestation by 2030. BBC. <https://www.bbc.com/news/science-environment-59088498>
57. The Global Commons Survey: attitudes to planetary stewardship and transformation among G20 countries. Global Commons Alliance. <https://globalcommonsalliance.org/wp-content/uploads/2021/08/Global-Commons-G20-Survey-full-report.pdf>

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Qlik
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* The Exponential Business ecosystem is continuously growing and this list was compiled in September 2022.

WE WELCOME YOUR FEEDBACK AND SUGGESTIONS

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“The 1.5°C Business Playbook is a framework for company strategy and action, that we use, to help our supply chain business partners to set 1.5°C aligned targets. We need all companies to be bold and join this journey towards a more sustainable and connected world.”

Börje Ekholm
CEO and President, Ericsson

“Now is the time for businesses to step up and take bold climate action for the future of humanity. ICC is proud to support the 1.5°C Business Playbook to provide companies of all sizes with a tool for actionable and ambitious climate policies that will accelerate the adoption of net-zero emissions targets across the private sector.”

John W. H. Denton
AO, ICC Secretary General

”The world needs exponential climate action. At Telia we enable a better future through connectivity and digital solutions that can speed up the transition into a resilient, low-carbon and circular economy. We work to reach zero CO2 & zero waste by 2030, including the ambition for a climate neutral value chain, and the 1.5°C Business Playbook is an excellent tool when inviting our customers, suppliers and other partners to join us. The knowledge and the necessary technology exist: so let’s make the 2020s a decade of action that matches the urgency of the situation.”

Allison Kirkby
President and CEO, Telia Company

“The science makes clear that we need a fundamental reshaping of business and finance. Every board and every company must show a credible strategy to align with 1.5°C. This Playbook is an excellent guide for the necessary journey to net-zero emissions, to prepare business for the fastest economic transition in history and help them drive it. It’s a guide for preserving a more liveable planet for future generations.”

Christiana Figueres

Former head of the United Nations Framework Convention on Climate Change, Convenor of Mission 2020

“This Playbook is aligned with the target to limit global warming to just 1.5°C. The only pathway left is massive emissions reductions across all business sectors in the next decade. We show that this is achievable.”

Johan Rockström

Co-director, Potsdam Institute for Climate Impact Research, Executive Director, Stockholm Resilience Centre, Co-chair, Future Earth

“The 1.5°C business playbook provides a great framework aligned with the Race to Zero campaign, available today for companies to use. Focusing on simplicity and speed, it will help companies to halve emissions by 2030 towards net-zero well before 2050.”

Nigel Topping

High Level Champion for Climate Action COP26

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