



Chartered
Governance
Institute

Boards Fit For Net Zero: Governance to 1.5 degree pathway

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About The Chartered Governance Institute

The Chartered Governance Institute is the premier global qualifying organisation for professionals aspiring to become a Chartered Secretary and/ or a Chartered Governance Professional. With over 130 years of history, we assist company secretaries, governance advisers, non-executive directors and others in the development of their skills, knowledge and experience. The Institute is an international organisation with nine national institutes in its network and 29,000 members living and working in over 80 countries. Most importantly, it brings its influence to bear on international trade bodies, governments, regulators, non government organisations and companies to represent the views and current thinking of those involved in governance.

The Institute's mission is to be the best explainer, the best advocate, the best educator and the most active organisation in the promotion of good governance internationally. Our members hold positions of responsibility in the field of governance across a wide range of entities. All of our members share a common interest in the promotion of excellence in governance.

Boards Fit For Net Zero: Governance to 1.5 degree pathway

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President's Foreword

The impact of climate change continues its march toward an ever-increasing frequency and intensity of near catastrophic events. There would be no continent or, most likely, no country, that has avoided a climate-related disaster in the last couple of years. As outlined in this paper, the most critical step that must be taken is to limit the increase in the global average temperature to well below 2°C above pre-industrial levels in an effort to limit the overall temperature increase to 1.5°C. If we are to achieve this, then the world needs a 45% reduction in CO2 emissions by 2030 with net-zero reached by 2050.

If there is any chance of succeeding then every person, every organisation and every government needs to do its part. Unfortunately, there is too much evidence that many governments do not have the will, nor the leadership, to adequately put in place the measures necessary to limit the increase to 1.5°C. What is gratifying is the pace at which organisations are stepping up to the challenge. The challenge then is to put this issue on the agenda of organisations where it currently does not exist and to maintain the momentum when it is on the agenda.

The Chartered Governance Institute takes an interest in this because, as governance professionals, we have an obligation to assist our organisations to put in place strategies to that work toward the limit of 1.5°C. We have decided to publish this paper for much the same reason as all our thought leadership papers - to give governance professionals a solid background in the topic but also to provide practical guidance. Our focus is not so much on the science of achieving net-zero but on the necessary aspects of good governance that will lead to success.

Organisations will be expected to have policies in place across a range of actions to limit climate change. What investors, and the wider stakeholder group, are looking for is how policies are implemented, how are they monitored, are they genuinely embedded in the organisation's

culture and so on. Furthermore, the four pillars of governance – accountability, transparency, integrity and stewardship are no longer enough. There is a fifth pillar – justice. It is about taking into consideration the impact of strategies that will affect different segments of our communities in different ways.

As you read through this paper you will see that not only do we outline best practices on board committee structures, collaboration and so on, but we also provide actual case studies that bring important governance practices to light. Our focus is very much on supporting governance professionals with practical steps and recommended approaches so that our members and all governance professionals can provide the leadership necessary for their organisations to achieve net-zero.



Jill Parratt

International President
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Table of contents

President's Foreword	iv
Introduction	1
Boards fit for Net Zero	3
National context	4
Value in taking action	4
Key areas of focus	4
Paris Agreement	6
Conference of Parties	6
United Nation Framework Convention on Climate Change	7
Reporting and transparency	7
Enhanced Transparency Framework	7
Sustainability and climate reporting	8
Greenhouse gas emission	10
Classifications of GHG	10
Steps for calculating GHG	11
Sectoral GHG emissions	11
Starting the Net Zero journey	12
Net Zero transition plan and strategies	13
Company brief	13
Case study analysis	16
Science-based approach	16
GHG profile	16
Risks and opportunities	16
Net Zero strategy	16
Governance	17
Reporting, disclosure and collaborations	17
Conclusion	19
Practical steps for governance professionals	20
1. Take a lead with relevant climate education	20
2. Develop and build upon existing ESG activity to inform your Net Zero strategy	20
3. What if we miss Net Zero deadlines?	20
4. Identify and engage collaborating partners	20
5. Finding appropriate financing	21
Glossary of key Net-Zero terms	22
Further Reading	24

Introduction

Everyone has a part to play in climate action, not least boards of directors. Arguably the most critical step we can take, as per the aim of the Paris Agreement (the international climate treaty)¹, is to limit the 'increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C'.² This requires CO₂ emissions to decline by 45% (relative to 2010 levels) by 2030, and then reach 'Net Zero' by 2050.³ Reductions in non-CO₂ emissions (such as nitrous oxide and methane)⁴ will also be required to limit warming to 1.5°C. Net Zero means ensuring the amount of greenhouse gas we produce equals, or ideally is less than, the amount we remove from the atmosphere. Boards of directors, as the stewards of their companies, are vital to the success of their organisations' journeys towards Net Zero. Expectations are high, time is tight and the work to be done is huge.

Encouragingly, many companies are making positive commitments to reduce their greenhouse gas emissions. Ford is focusing on several measures including using locally sourced renewable energy for all its plants by 2035.⁵ The supermarket chain, Woolworths, became Australia's first retailer to have its emission reduction targets endorsed by the global Science Based Targets initiative (SBTi), with its measures including the replacement of traditional lighting with LED (light emitting diode) lighting and investing in improved refrigeration systems.⁶

However, while all pledges and steps taken towards Net Zero are commendable, climate activists are demanding credible action from companies and not greenwashing for public relations. For example, Greenpeace France and others are suing TotalEnergies⁷ alleging that the company misled consumers and investors by falsely claiming the company was on track to be carbon neutral by 2050 and was a key player in the energy transition. The Forest Litigation Collaborative has made a complaint to the Organisation for Economic Co-operation and Development (OECD) alleging that Drax (a wood-burning electricity generator) falsely claimed to generate carbon-neutral electricity.⁸ Companies must also be aware that investors are demanding credible and scalable climate pledges. Is your board prepared for this extraordinary task and do the directors have the necessary literacy and capacity for delivering science-driven Net Zero goals?

An annual corporate survey of directors conducted by PwC showed that 72% of boards in large corporations have discussed climate change, but only 27% of boards in smaller businesses do so.⁹ The survey also found that 'fewer than two-thirds of directors say their board understands the company's climate risk/strategy or the internal processes and controls around data collection', while only 56% 'think they understand their company's carbon emissions'.¹⁰ Another survey carried out by

1 United Nations 2015, *Paris Agreement*, Article 2(a), https://unfccc.int/sites/default/files/english_paris_agreement.pdf, accessed 19 February 2023.

2 United Nations Framework Convention on Climate Change, *Key aspects of the Paris Agreement*, <https://unfccc.int/most-requested/key-aspects-of-the-paris-agreement>, accessed 22 February 2023.

3 United Nations Framework Convention on Climate Change, *Climate plans remain insufficient: More ambitious action need now*, <https://unfccc.int/news/climate-plans-remain-insufficient-more-ambitious-action-needed-now>

4 Gielen D and Kram T, 20 The role of Non-Co₂ greenhouse gases in meeting Kyoto targets, <https://www.oecd.org/dev/1923119.pdf>, accessed 22 February 2023

5 Ford 2020, *Ford expands climate change goals, sets global target to become carbon neutral by 2050*, media release, 26 June 2020, <https://media.ford.com/content/fordmedia/feu/en/news/2020/06/25/Ford-Expands-Climate-Change-Goals.html>, accessed 22 February 2023.

6 Woolworths Group 2020, *Woolworths Group's 2030 emissions reduction targets endorsed by UN-backed Science Based Targets initiative*, media release, 25 September 2020, www.woolworthsgroup.com.au/au/en/media/latest-news/2020/woolworths-groups-2030-emissions-reduction-targets-endorsed-by-un-backed-science-based-targets-initiative.html, accessed 22 February 2023.

7 Sutton I, 2022, *Veracity of corporate net-zero pledges and advertising being challenged in courts*, <https://energypost.eu/veracity-of-corporate-net-zero-pledges-and-advertising-is-being-challenged-in-court>, accessed 11 November 2022.

8 Sutton I, 2022, *Veracity of corporate net-zero pledges and advertising being challenged in courts*, <https://energypost.eu/veracity-of-corporate-net-zero-pledges-and-advertising-is-being-challenged-in-court>, accessed 11 November 2022.

9 PwC, 2022, *PwCs 2022 Annual Corporate Directors Survey*, p 21, www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html, accessed 2 November 2022.

10 PwC, 2022, *PwCs 2022 Annual Corporate Directors Survey*, p 15, www.pwc.com/us/en/services/governance-insights-center/library/annual-corporate-directors-survey.html, accessed 2 November 2022.

Deloitte Global¹¹ in 2021 concluded that 87% of respondents who were audit committee members, thought better education among board members would contribute significantly towards board leadership on climate change. Given the impetus to act now, as well as increasing expectations being placed on private sector businesses as important participants in delivering low-carbon economic activities, what do boards need to know to enhance climate fitness in their organisation if they are to meet Net Zero? What best practices can help boards act now?

In this paper, we aim to provide both the background and practical guidance to Net Zero leadership. We begin with a portrayal of boards that are fit for Net Zero transitioning and then outline the most relevant sections of the Paris Agreement, as the fulcrum of climate policy. We also highlight the importance of measuring greenhouse gas emissions as a baseline for climate action, while highlighting key takeaways for the board. To help illustrate this we outline best practices on board committee structures, collaboration, finance and disclosure through case studies on the following four companies: Holcim Group, General Motors, Woolworths Group and Sasol Group. As usual, our focus is very much on supporting governance professionals with practical steps and recommended approaches: not just learning but relearning, emphasising the need for professional responsibility for a Net Zero strategy and action plan, and placing collaboration (including stakeholder relations) and transparency at the heart of this important work.



¹¹ Iwasaki J and Konigsburg D, 2022, *Overcoming the hurdles to board leadership on climate change*, www2.deloitte.com/us/en/insights/topics/leadership/audit-committee-climate-change.html, accessed 7 December 2022.

Boards fit for Net Zero

The Paris Agreement, which we outlined above and will discuss in more detail below, is one of a series of agreements including the Kyoto Protocol in 1997 and the Copenhagen Accord in 2009. Its goal is to achieve an historic transformation from carbon-emitting activities to a zero-carbon world. This is a huge task as we work to find a balance between sustainable growth and survival in an orderly and inclusive manner. While the agendas for environmental, social and governance (ESG), diversity, equity and inclusion (DEI) and other sustainability initiatives have made in-roads into boardrooms for at least a decade, the Net Zero agenda is relatively new for many boards, particularly in the developing nations and small and medium enterprises (SMEs). Governance professionals have an important role to play: easing concerns among boards that are yet to commit to Net Zero transitioning, by aligning Net Zero plans with existing ESG and other sustainability plans with which boards are already familiar.

With less than seven years left to reach the 45% reduction targets by 2030, the Net Zero challenge requires scientific, business, global and future-thinking approaches to achieve multi-dimensional, long-term solutions, while successfully pursuing short-term activities at the organisational level. Technological innovation or changing value chains from high- to low-carbon emitters requires major capital outlays. So, how do businesses finance both short-term cashflow requirements and long-term innovations? And what collaborations can help businesses upscale their climate-friendly activities? This is a huge responsibility, not just for boards but governance professionals too, as their immediate choices, decisions and actions will impact the planet, and current and future generations. It can no longer be business as usual, as this challenge is calling for a transformative leadership approach, which can inspire new possibilities while at the same time sustaining day-to-day business activities.

Boards fit for Net Zero are the stewards of this onerous and once-in-a-lifetime global challenge. Net Zero actions will reset human activities for decades to come. Boards are now required to have a sense of urgency coupled with regular self-analysis of their organisation's own carbon footprint, measuring and setting a baseline against which to evaluate mitigation, adaptation and financing actions. Boards need to make decisions on what really matters, not just for their organisation, but for their sector, their nation, their region and the world. This could be finding business value in waste, applying circularity to reduce-reuse-recycle, rather than the old linear methods of take-make-dispose. This need for committed, visionary and courageous leadership must be coupled with the humility to be able to ask seemingly mundane questions, such as 'What is an emission?', and being insightful enough to see opportunities in the large volumes of climate research and data, whether that be business opportunities or the opportunity to enhance best practices. Governance professionals can take a lead in climate education — analysing, comparing and consolidating relevant data for the board.

Awareness of matters, such as the different regional effects of climate change across the global space, will help the board decide on the role that the organisation should play in the broader Net Zero action. For example, transitioning to the relatively new technology of electric vehicles has been facilitated by the philanthropic activities, partnerships and collaborations of leaders in the industry such as General Motors or Tesla, which engage and train their employees, suppliers and customers to bring them up to speed with the new technology. It is therefore evident that the Net Zero agenda is multi-dimensional.

National context

Boards will also learn that their decisions matter and that their choices of action (or inaction) will have an impact at a national and international level. Under the Paris Agreement (outlined above and discussed in more detail below) the signatory countries each has a climate action plan, known as nationally determined contributions (NDCs),¹² and the Agreement has also established a monitoring mechanism, known as the Enhanced Transparency Framework (ETF), which 'guides countries on reporting their greenhouse gas emissions, progress toward their NDCs, climate change impacts and adaptation, support provided and mobilized, and support needed and received'.¹³ A company's actions impact the NDCs and its reporting and disclosures contribute to the ETF.

Value in taking action

Whether or not a board is engaged actively in the Net Zero agenda, it will be part of business conversations and decisions for some time. This means that businesses have a choice: be proactive with innovative solutions, or just be responsive. There is business value and reward in being proactive, not least because the business can take considered, strategic decisions which are aligned with their general strategies. For example, McKinsey¹⁴ cites that if the world is to reach the Net Zero targets by 2050, then economic output must start moving away from high-emitting goods and services towards low-carbon ones. The ripple effect created along the value chains is going to be enormous and will change industry and regional dynamics. It is further cited that the motor vehicle industry switching to electric vehicles (EVs) will cause a fall in oil consumption, partly because drivers will no longer be needing it to fuel for their cars. Electric power generation will then need to increase to help charge the world's expanding fleet of EVs. A much greater share of that

electricity will come from renewable sources such as solar and wind, rather than coal- or gas-fired power plants. Those who have led the way in this transition are already enjoying success. According to McKinsey research,¹⁵ 'green leaders among EU chemical companies ... have seen their enterprise multiples increase, while laggards' multiples have remained flat'. The business wisdom in this is that boards should not be afraid to lead in uncharted waters, but should, with sound knowledge, guidance and collaboration, dare to take first steps into the sphere of low carbon.

Key areas of focus

Oneness of governance is now being tested as investors, boards, professionals, stakeholders and organisations help steer huge capital outlays, human capital and demand for goods and services into low-carbon activities. The roles and responsibilities of each stakeholder, including governance professionals, are determinable by answering important questions in key areas (see Table 1).

Importantly, boards that are fit for Net Zero work and collaborate with others across sectors, regions or nations to address the common global problem of climate change. Net Zero transitioning is less advanced in some regions (such as the global south when compared with the global north) or among sectors (such as the energy sector when compared with the land use and food sector). These differences in climate action can be reduced through, for example, the alignment of national policy guidelines to assist boardrooms, as well as in upward reporting and transparency from all boardrooms to national instruments, such as, the enhanced transparency frameworks. In the following section we discuss the Paris Agreement as the fulcrum of climate policy development.

12 Nationally determined contributions are the embodiment of a country's efforts to reduce national emissions and adapt to impacts of climate change: see <https://unfccc.int/ndc-information/nationally-determined-contributions-ndcs>, accessed 2 November 2022.

13 See World Resources Institute, *Navigating the Paris Rulebook*, www.wri.org/paris-rulebook/enhanced-transparency-framework, accessed 2 November 2022.

14 McKinsey, 2022, *Playing offensive to create value in the net zero transition*, www.mckinsey.com/capabilities/sustainability/our-insights/playing-offense-to-create-value-in-the-net-zero-transition, accessed 29 November 2022.

15 See McKinsey, 2022, *Playing offensive to create value in the net zero transition*, www.mckinsey.com/capabilities/sustainability/our-insights/playing-offense-to-create-value-in-the-net-zero-transition, accessed 29 November 2022.

Table 1: Questions to key Net Zero areas

Key Areas	Questions
Green funds	In what and where should we invest?
Board and committee structures	Which structures will best serve sustainable transitioning?
Strategies	Which strategies work best, taking into account existing ESG and sustainability plans?
Governance processes	Which processes will provide swift decision-making, enhance climate literacy, facilitate the availability of information and data sharing, as well as provide financial and other resources, accountability and transparency for Net Zero activities?
Stakeholder communication	Has the organisation's own pledge towards Net Zero been made known to stakeholders?
Collaboration and networking opportunities	Which opportunities are available and with which organisations should we align our strategies?
Targets	Are we on course to meet set targets, organisationally, nationally and globally?
Climate conversation tone	What is the tone of the local, national and global climate conversation? Is the national focus on mitigation, adaptation or financing? Which voices are more vocal for young or vulnerable people?

Board Nugget

Net Zero is multi-disciplinary and collaborative, but not competitive. Boards should learn quickly to work closely together with other entities according to a mutually agreed vision and guidelines.

Paris Agreement

The Paris Agreement,¹⁶ which is legally binding, was adopted by 196 countries at the 21st Conference of Parties (COP21) in 2015 and came into effect in 2016. As mentioned in the Introduction, the aim of the treaty is to limit global warming to well below 2°C compared to pre-industrial levels and pursue 1.5°C. In order to achieve this long-term temperature goal, countries agreed to reach global peaking of greenhouse gas emission as soon as possible to achieve a climate neutral world by 2050. The Paris Agreement also 'aims to strengthen countries' ability to deal with the impacts of climate change and to support them in their efforts'.¹⁷

The Paris Agreement works in five-year cycles of climate action carried out by countries. Individual parties to the treaty submit their plans for climate action in the form of nationally determined contributions (NDCs). NDCs are the embodiment of a country's efforts to reduce national emissions and adapt to the impacts of climate change. Information contained in NDCs includes targets, policies and measures for reducing national emissions and adapting to climate change effects, together with details on the finance, technologies and capacity enhancement required to reach those targets. Businesses can contribute to their country's NDC process by engaging with their government, either directly or through business associations so as to provide accountability of their climate commitment,¹⁸ offer solutions to challenges faced by governments and raise ambition levels for the next NDC in 2025.

Similarly, businesses and their boards can engage in the national climate reporting and monitoring process, through the Enhanced Transparency Framework (ETF), which was established by the Paris Agreement. Working together with others to achieve better Net Zero outcomes will distinguish

genuine low-carbon action from greenwashing¹⁹ and public relations stunts, both at organisational and national levels. Therefore governance professionals should encourage boards to develop bold and ambitious business models that are aligned with the national Net Zero initiatives in terms of target dates, board structures and processes (see case study paragraph for examples), innovation and research. ETFs are discussed in more detail below.

Conference of Parties

The Conference of Parties (COP) is the highest decision-making body of the Paris Agreement. All countries that are parties to the treaty are represented at the COP to implement the Agreement, such as through nationally determined contributions and other supporting instruments. The COP has met every year since the first COP (COP1) in Berlin Germany in 1995, with the most recent being the 2022 COP27 in Egypt where two of the major outcomes were the need to speed up Net Zero implementation and for there to be more accountability on commitments made by businesses. Consequently, governance professionals play a role in helping boards to interpret COP outcomes into organisation-specific and actionable information, and to ensure that their organisation is following accountability, transparency and other Net Zero related guidelines.

Board Nugget

There is now a sense of urgency at COP meetings — businesses are being held to account in the implementation of the Net Zero agenda, demanding more accountability on commitments.

16 United Nations, *The Paris Agreement — What is the Paris Agreement?*, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>, accessed 2 November 2022.

17 See European Commission, *Paris Agreement*, https://climate.ec.europa.eu/eu-action/international-action-climate-change/climate-negotiations/paris-agreement_en, accessed 17 November 2022.

18 Climate Governance Initiative, 2022, *COP27: Key outcomes for board of directors*, <https://climate-governance.org/cop27-key-outcomes-for-board-directors>, accessed 6 December 2022.

19 Greenwashing refers to a company spending time and money on advertising and marketing that claims that its goods and services are environmentally friendly when they are really not.

United Nation Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) is the parent treaty to the Paris Agreement. The UNFCCC Secretariat (UN Climate Change) is the UN entity tasked with supporting the global response to climate change and was formed in 1992 when countries adopted the UNFCCC. Parties to the UNFCCC are classified as follows:²⁰

Annex I: 'Industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992 [such as the United Kingdom and Australia], plus countries with economies in transition [such as Russia and Eastern European States]'

Annex II: 'OECD members of Annex 1, but not the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change.'

Non-Annex I: '... mostly developing countries [such as Barbados and Sri Lanka and including] especially vulnerable ... countries with low-lying coastal areas prone to desertification and drought ... [and] countries that rely heavily on income from fossil fuel production and commerce [for which the] Convention emphasizes activities ... to answer the special need and concerns of these ... countries, such as investment, insurance and technology transfer.'

In addition there are three categories of observer organisations:²¹

- the United Nations System and its Specialised Agencies
- intergovernmental organisations (IGOs)

- non-governmental organisations (NGOs), which 'represent a broad spectrum of interests and include business and industry, environmental groups, farming and agriculture, indigenous populations, local governments and municipal authorities, research and academic institutes, Labour unions, women and gender and youth groups'.

Board Nugget

Identify which category your jurisdiction falls into under the UNFCCC classification and the risks and opportunities presented by the various representative groupings. These might include global initiatives around climate financing, national or regional changes in climate targets and regulation, or opportunities to collaborate and participate in climate action specific to your geography.

Reporting and transparency

Enhanced Transparency Framework

'The enhanced transparency framework [ETF] is central to the design, credibility and operation of the Paris Agreement.²² Its purposes are to 'build mutual trust and confidence [to] promote effective implementation of the Paris Agreement'²³ and guide 'countries on reporting their greenhouse gas emissions, progress toward their NDCs [and] climate change impacts and adaptation',²⁴ among others. Countries that are party to the Agreement also agreed to report under the ETF through documents known as biennial transparency reports (BTRs), which focus on progress of NDCs, climate change impact, and adaptation including financing. Vulnerable countries may request for flexibility on requirements and developed countries must report on finance

20 United Nations, *UNFCCC Process — Parties and Observers*, <https://unfccc.int/parties-observers>, accessed 17 November 2022.

21 United Nations, *UNFCCC Process — Observer Organizations*, <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/overview/observer-organizations>, accessed 19 February 2023.

22 World Resources Institute, *Navigating the Paris Rulebook*, www.wri.org/paris-rulebook/enhanced-transparency-framework, accessed 20 February 2023.

23 United Nations Climate Change, *Enhanced Transparency Framework — Technical Manual*, <https://unfccc.int/process-and-meetings/bodies/constituted-bodies/consultative-group-of-experts-cge/cge-training-materials/enhanced-transparency-framework-technical-material>, accessed 19 February 2023.

24 World Resources Initiative, *Navigating the Paris Rulebook*, www.wri.org/paris-rulebook/enhanced-transparency-framework#:~:text=Specifically%2C%20the%20enhanced%20transparency%20framework,and%20support%20needed%20and%20received, accessed 19 February 2023.

that they may have provided and mobilised for climate action. There are ongoing efforts to simplify and harmonise climate-related reporting, which further enhances transparency and alignment of standards, and assists in combatting greenwashing.²⁵ The importance of aligning sustainability, climate and financial value in reporting and disclosure is increasingly becoming a reality for organisations as entities honour Net Zero pledges and realise the interconnectedness of governments, the private sector and other stakeholders in climate action. In the next paragraph we provide a more detailed summary of sustainability, climate and nature reporting, and disclosure standards.

Sustainability and climate reporting

The Integrated Reporting Framework, which is part of the IFRS Foundation, 'is used to accelerate the adoption of integrated reporting across the world'²⁶ and 'promotes a more cohesive and efficient approach to corporate reporting and aims to improve the quality of information available to providers of financial capital'.²⁷ The International Accounting Standards Board (IASB) and The International Sustainability Standards Board (ISSB)²⁸ promote the use of the principles contained in this framework in order to encourage more effective corporate reporting. The ISSB was launched at COP26 in Glasgow in 2021, under the IFRS, 'to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions'.²⁹ The two initial ISSB standards (effective 1 January 2024) are the General Sustainability-related Disclosures Standard (S1) and the Climate-related disclosures Standard (S2).³⁰ Importantly,

'The importance of aligning sustainability, climate and financial value in reporting and disclosure is increasingly becoming a reality for organisations as entities honour Net Zero pledges and realise the interconnectedness of governments, the private sector and other stakeholders in climate action.'

'Sustainability will be described in ... S1 as the ability for a company to sustainably maintain resources and relationships with and manage its dependencies and impacts within its whole business ecosystem over the short, medium and long term'. S2 seeks 'to build upon the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) and incorporate industry-based disclosure requirements derived from SASB Standards'.³¹

The TCFD has been instrumental in leading the way in climate reporting frameworks and, through working in close collaboration with the Task Force on Nature-Related Financial Disclosures (TNFD), seeks to combine both biodiversity and climate in integrated reporting strategies. The two new standards are the result of requests from G20 leaders, the International Organisation of Securities Commission (IOSCO) and others for a material and significant change in the way companies have

25 Climate Governance Initiative, 2022, COP27: Key outcomes for board directors, <https://climate-governance.org/cop27-key-outcomes-for-board-directors>, accessed 19 February 2023.

26 IFRS, *Integrated Reporting Framework*, www.integratedreporting.org/resource/international-ir-framework, accessed 19 February 2023.

27 IFRS Foundation, 2022, *The growing momentum for integrated reporting: Part 2*, www.integratedreporting.org/news/the-growing-momentum-for-integrated-reporting-part-2, accessed 19 February 2023.

28 IFRS Foundation, 2022, ISSB delivers proposals that create comprehensive global baseline of sustainability disclosures, www.ifrs.org/news-and-events/news/2022/03/issb-delivers-proposals-that-create-comprehensive-global-baseline-of-sustainability-disclosures/?utm_medium=email&utm_source=website-follows-alert&utm_campaign=immediate, accessed 19 February 2023.

29 IFRS, 2022, *International Sustainability Standards Board*, www.ifrs.org/groups/international-sustainability-standards-board, accessed 19 February 2023.

30 IFRS, 2023, *Climate related disclosures*, www.ifrs.org/projects/work-plan/climate-related-disclosures, accessed 19 February 2023.

31 IFRS, 2023, *Climate related disclosures*, www.ifrs.org/projects/work-plan/climate-related-disclosures, accessed 19 February 2023.



traditionally reported on information that they use for assessing their sustainability-related risks and opportunities when valuing their enterprises.

At their meeting on 16 February 2023, informed by feedback it received during extensive consultation in 2022:

... the ISSB agreed that its initial IFRS Sustainability Disclosure Standards, S1 and S2, will become effective starting January 2024. Given sustainability disclosure is new for many companies globally, the ISSB will introduce programmes that support those applying its Standards as market infrastructure and capacity is built. ... The ISSB is currently engaging with a number of other jurisdictions and organisations active in sustainability standard-setting in support of the interoperability of its global baseline of cost-effective, decision-useful Standards, and to prepare for their effective rollout.³²

Importantly, the Integrated Reporting Framework will provide a conceptual basis for connecting the IFRS Accounting Standards with the two new Standards.³³ In the next section we will turn our focus to Greenhouse Gas emissions.

Board Nugget

Take stock of your company's method of collecting and reporting climate data, including the standards applied in accordance with jurisdictional climate regulations.

32 IFRS, 2023, *ISSB ramps up activities to support global implementation ahead of issuing inaugural standards end of Q22023*, www.ifrs.org/news-and-events/news/2023/02/issb-ramps-up-activities-to-support-global-implementation-ahead-of-issuing-inaugural-standards-end-q2-2023, accessed 21 February 2023.

33 IFRS, 2022, *What's the future of the framework under the IFRS Foundation?*

Greenhouse gas emission

Greenhouse gas emission (GHG) is the science-based and generally agreed central cause of climate change. Since the beginning of the 20th century, human economic activities have released greenhouse gases into the atmosphere. Climate action is about removing or mitigating risks associated with GHG and there are two key points that the board should appreciate:

1. Anthropogenic emissions, which are emissions created or influenced by people, such as burning of fossil fuels, use of land for agriculture or deforestation, are the cause for global warming as opposed to natural climate change. Companies and their boards should understand the costs of high-carbon emissions through both products and services lines, as well as from vulnerability to local and regional emissions.
2. Measuring emissions can serve as a useful metric for understanding a country's or an organisation's impact on global warming. Often expressed as tonnes of 'CO₂ equivalent', this metric factors in the different amounts of warming caused by different types of emissions, for example, methane. This allows the 'carbon intensity' of different activities to be compared, and for the progress or success of climate initiatives to be measured.

According to the UN Climate Action, the top seven GHG emitters are China, the United States, India, the European Union, Indonesia, the Russian Federation and Brazil.³⁴ Organisations also have unique GHG profiles depending on their line of business, value chain processes and geographical locations.

The board's first responsibility should be to identify the organisation's unique GHG profile in relation to its country or regional GHG emission patterns

and climate risks and opportunities. It should then measure it, monitor it and report on the results of its climate actions so as to manage the risks and opportunities.

Classifications of GHG

There are three classifications of GHG, which 'categorise the different kinds of carbon emissions a company creates in its own operations, and in its wider value chain':³⁵

- **Scope 1** covers the GHG emissions that a company makes directly and therefore over which it has direct control, for example, emissions from boilers, furnaces or the company's own fleet of vehicles.
- **Scope 2** covers emissions made indirectly, that is made on its behalf, such as electricity or energy that the company buys from power companies, for cooling and heating buildings.
- **Scope 3** covers those emissions associated with the company's value chain, either upstream through its customers or downstream through its suppliers. Scope 3 emissions usually make up the largest of carbon footprints, depending on the extent of the organisation's value chain.

GHG is a scientific subject and there is proliferation of research data, which can be overwhelming. Boards should therefore seek necessary expertise to not only simplify the data but to translate it into actionable information. Collaboration and partnerships, with organisations such as the UN-linked Net Zero Coalition,³⁶ Race to Zero,³⁷ Climate Ambition Alliance,³⁸ Science Based Targets initiative (SBTi)³⁹ and Climate Governance Initiative,⁴⁰ can provide invaluable

34 United Nations Climate Action, *For a livable climate: Net-zero commitments must be backed by credible action*, www.un.org/en/climatechange/net-zero-coalition#:~:text=Most%20emissions%20come%20from%20just,greenhouse%20gas%20emissions%20in%202020, accessed 19 February 2023.

35 Deloitte, *Scope 1, 2 and 3 emissions*, www2.deloitte.com/uk/en/focus/climate-change/zero-in-on-scope-1-2-and-3-emissions.html, accessed 19 February 2023.

36 See www.un.org/en/climatechange/net-zero-coalition, accessed 19 February 2023.

37 United Nations Climate Change, *Race to zero campaign*, <https://unfccc.int/climate-action/race-to-zero-campaign#:~:text=Race%20To%20Zero%20is%20a, and%20unlocks%20inclusive%2C%20sustainable%20growth>, accessed 19 February 2023.

38 See https://climateinitiativesplatform.org/index.php/Climate_Ambition_Alliance:_Net_Zero_2050#:~:text=The%20Climate%20Ambition%20Alliance%20brings,zero%20CO2%20emissions%20by%202050, accessed 19 February 2023.

39 World Resources Institute, *The Science Based Targets initiative (SBTi)*, www.wri.org/initiatives/science-based-targets, accessed 19 February 2023.

40 See <https://climate-governance.org>, accessed 19 February 2023.

Greenhouse gas emission

support to both boards and the executive. Reporting and disclosure of GHG is important for transparency, consolidation and consistency in Net Zero transitioning as well as for recognising opportunities for voluntary actions.

Steps for calculating GHG

Five steps, which may help boards in understanding steps towards the calculation of GHG, are adapted from *The Greenhouse Gas Protocol*⁴¹ as shown in Figure 1 below.

Sectoral GHG emissions

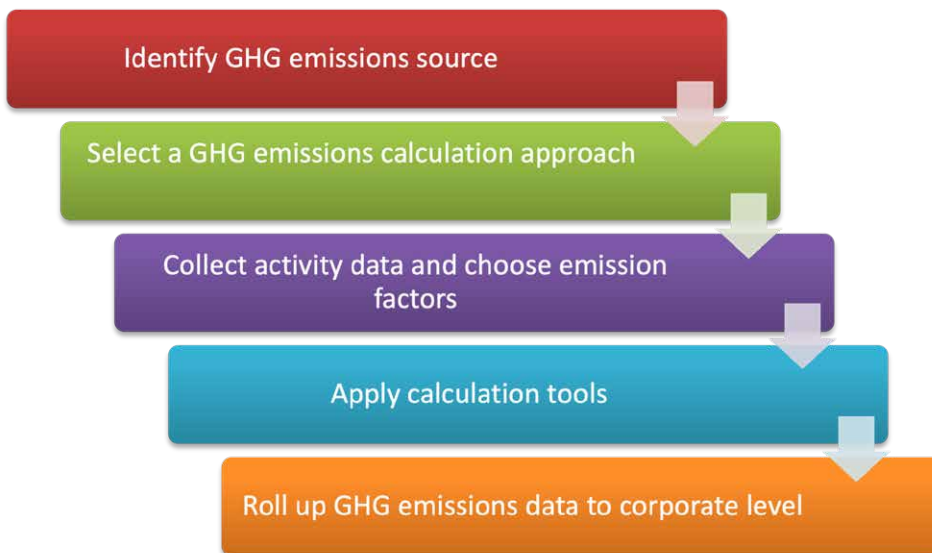
The energy sector has consistently remained the highest GHG global emitter, accounting for more than 70% of global emissions in the period between 1990 and 2021, followed by agriculture and land use/forestry at around 18%, while waste and industrial processes⁴² were around 3% each. It is important to understand risks, technological

and financing opportunities associated with specific sectors in order to fulfil accountability and transparency commitments through reporting and disclosure of carbon reduction measures, as well as provide working linkages among sector collaborative partnerships, both locally and internationally.

Board Nugget

Identify your organisation's GHG emission profile, calculate and simplify data, translate it into actionable information, collaborate with science-based climate organisations, and report and disclose steps taken to reduce emission.

Figure 1: Steps for calculating GHG



Source: The Greenhouse Gas Protocol

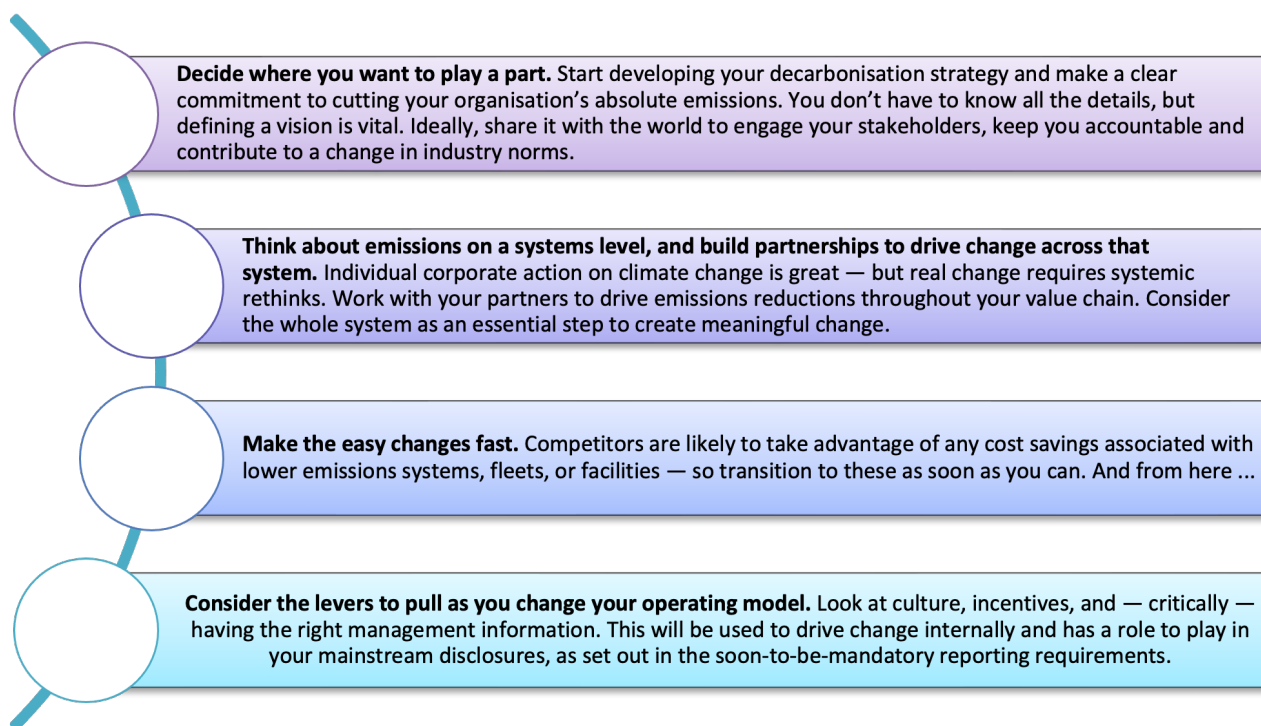
41 World Resources Institute, 2004, *The Greenhouse Gas Protocol*, p 41, <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>, accessed 22 February 2023.
42 Climate Watch, *Historical GHG emissions*, www.climatewatchdata.org/ghg-emissions?breakBy=sector&chartType=percentage&end_year=2019&start_year=1990, accessed 19 February 2023.

Starting the Net Zero journey

Having understood the GHG emission profiling, the board and governance professionals can start to work on Net Zero transition planning. Each organisation sits at different stages of maturity in its Net Zero journey, and the issue of climate change may impact some businesses more than others. Boards will need to assess at which stage of the Net Zero journey their organisation is and the prerequisites for progressing towards a more evolved stage. This can include consideration of overlap with existing ESG initiatives, risk, current reporting procedures and requirements, any incentives or barriers to action, and peer benchmarking. As 2030 draws closer, there is

increased demand not only for organisations to have developed a Net Zero target and transition plan, but also for them to take tangible action and to report on the progress made towards realising these goals. Whether a business is at the planning or at the implementation stage, a board will need to maintain the momentum. Figure 2 below provides a summary of how to embark on the Net Zero journey.

Figure 2: Tips on starting the Net Zero journey



Source: Deloitte⁴³

43 Barber M, 2020, *Getting started with net-zero*, www2.deloitte.com/uk/en/blog/risk-powers-performance/2020/getting-started-with-net-zero-our-top-five-tips.html, accessed 15 November 2022.

Net Zero transition plan and strategies

As mentioned above, implementation of climate action is at various stages for different organisations. Companies, such as small- to medium-scale enterprises, that are yet to start the journey, should note that this is a journey of incremental ambitions, innovations, speed and scale. In this section, we present a case study analysis of four companies: Holcim Group, General Motors, Woolworths Group and Sasol Group.

Company brief

A brief about the companies is as follows;

Holcim Group⁴⁴ which is headquartered in Switzerland operates in markets across the world in four business units: cement, ready-mix concrete, aggregates (focusing on crushed stone, gravel and sand), and solutions and products.

General Motors⁴⁵ (GM) is headquartered in the United States and is on a mission to become

carbon neutral in global products by 2040. Under its vision of zero crashes, zero emissions and zero congestion, GM operates in markets across the world.

Woolworths Group⁴⁶ is retail group of companies based in Australia and New Zealand. The company's Net Zero thrust is for a 100% green energy by 2030 and net positive emissions by 2050.

Sasol Group⁴⁷ is a global chemicals and energy company headquartered in South Africa, which operates in many countries including Mozambique, China, Germany, Italy and Slovakia. Its baseline for the Net Zero agenda is 2017 and by 2030 the company envisages that it will have achieved a 30% carbon reduction and zero carbon by 2050.

Table 3 is only indicative of a few key Net Zero activities for the four companies.

Table 3: Net Zero highlights for case study

	Holcim Group ⁴⁸	General Motors ⁴⁹	Woolworths Group ⁵⁰	Sasol Group ⁵¹
Carbon neutral target year	2050	2040	2050	2050
GHG Emission	Scope 1 — 75% ⁵² Scope 2 — 5% Scope 3 — 20%	Scope 1 and 2 — 2% Scope 3 — 98%	Scope 1 and 2 — Not specified ⁵³ Scope 3 — Highest (reported to be 14 times both Scope 1 and 2)	Scope 1 and 2 — 63% Scope 3 — 37%
Net Zero approach	Science-based approach (SBTi)	Science-based approach (SBTi)	Science-based approach (SBTi)	Science-based approach (SBTi)

44 See www.holcim.com/who-we-are/our-brands-members, accessed 19 February 2023.

45 General Motors, *The journey to zero emissions*, www.gmsustainability.com/priorities/reducing-carbon-emissions/journey-to-zero-emissions.html, accessed 19 February 2023.

46 See www.woolworthsgroup.com.au, accessed 22 February 2023.

47 See www.sasol.com, accessed 22 February 2023.

48 Holcim, 2022, *Climate Report*, www.holcim.com/sites/holcim/files/2022-04/08042022-holcim-climate-report-2022.pdf, accessed 19 February 2023.

49 General Motors, 2021, *Sustainability Report*, www.gmsustainability.com/_pdf/resources-and-downloads/GM_2021_SR.pdf, accessed 19 February 2023.

50 Woolworths Group, 2022, *Sustainability Report*, www.woolworthsgroup.com.au/content/dam/wwg/investors/reports/2022/full-year/Woolworths%20Group%20Sustainability%20Report%202022%20print%20friendly.pdf, accessed 19 February 2023.

51 Sasol, 2022, *Sustainability Report*, www.sasol.com/index.php/investor-centre/sustainability-reporting, accessed 19 February 2023.

52 Holcim, 2022, *Climate Report*, p 10, www.holcim.com/sites/holcim/files/2022-04/08042022-holcim-climate-report-2022.pdf, accessed 19 February 2023.

53 Woolworths Group, *Net positive carbon emissions by 2050*, <https://www.woolworthsgroup.com.au/au/en/sustainability/Planet/net-positive-carbon-emissions-by-2050.html>

	Holcim Group	General Motors	Woolworths Group	Sasol Group
Risks	Floods/excessive heat/ high precipitation/waste	Supply chain for minerals such as nickel, lithium and cobalt	Fire and rain impact on store operations/ delayed adoption of new technologies/ food security/customer expectations of sustainable products	Tropical storms (hurricanes and cyclones)/high rainfall/ severe lightning/ heatwaves/tornadoes/ high winds/stranded fossil-fuel assets and resources
Opportunities	<ul style="list-style-type: none"> • Circular economy — reduce/re-use/ recycle Increasing demand for low carbon building materials • Concrete is key for climate mitigation and adaptation (help upgrade cities to withstand effects of climate change) 	<ul style="list-style-type: none"> • Extend electric vehicle (EV) manufacturing and sales, and fuel cell technologies, beyond light-duty vehicles to other transportation modes such as rail, shipping and heavy- duty trucks • Capacity building of work force, EV technicians, local supply chain 	<ul style="list-style-type: none"> • Reduce and green energy use • Embrace circularity in reducing food waste and landfill • Increase resilience in value chain • Support industry, customer team and community in climate resilience 	<ul style="list-style-type: none"> • Development of green hydrogen and gas economy/ supporting local demand and providing incentives for markets • Sustainable carbon feedstock and no investments in new coal reserves • Sustainable aviation fuel • Differentiated technology with unique abilities (Sasol ecoFT and Corporate Capital Venture Fund)
Strategy	Net Zero at the centre of the company's 'Strategy 2025 — Accelerating Green Growth'	Net Zero is embedded in GM's technology and software growth strategy in transitioning to EV and Autonomous Vehicles (AV)	Net Zero is set out within the Woolworth's Sustainability Plan 2025 that embodies, people, planet, products	Net Zero is embedded in the Sasol's Sustainability Approach set at 30% emission reduction by 2030 as well as to support South Africa's NDCs targets. Just Transition socio- economic activities
Governance	The Audit and the Health, Safety and Sustainability Committees oversee the risk management and internal control process, including sustainability and climate change-related risks and opportunities	Governance and Corporate Responsibility Committees is responsible for ESG	The Risk and Board Sustainability Committees oversee the management of climate- related risks	The Safety, Social and Ethics Committee (SSEC) provides integrated strategic direction on sustainability, safety, social and ethics matters for Sasol including climate change

Net Zero transition plan and strategies

	Holcim Group	General Motors	Woolworths Group	Sasol Group
Reporting and disclosure	<p>Aligned to</p> <ul style="list-style-type: none"> • Task Force on Climate-related Financial Disclosures (TCFD) • Science Based Targets initiative (SBTi) 	<p>Aligned to</p> <ul style="list-style-type: none"> • Transportation Standards and The Financial Stability Board — Task Force of Climate-Related Financial Disclosure (TCFD) • Science Based Targets initiative (SBTi) • Global Reporting Initiative (GRI) • Sustainability Accounting Standards Board Framework 	<p>Aligned to</p> <ul style="list-style-type: none"> • Task Force on Climate-related Financial Disclosures (TCFD) • Science Based Targets initiative (SBTi) • Global Reporting Initiative (GRI) 	<p>Aligned to</p> <ul style="list-style-type: none"> • Task Force on Climate-related Financial Disclosures (TCFD) • UN Sustainable Development Goals (SDGs) • Global Reporting Initiative (GRI) • JSE Climate Disclosure Guidance
Finance	CHF500 million (US\$535 million) for Capex per annum	Capital and philanthropic ventures to support zero-emissions future: US\$35 billion investment in EV and AV departments and US\$50 million Climate Equity Fund to assist community-based organisations to close equity gaps in EV transition and other sustainable technology	Green bonds ⁵⁴ — AUS\$400 million (issued 2019)	Science-based approach (SBTi)
Collaboration and partnerships	Several collaborations and partnerships, for example, carbon capture, utilisation and storage (CCUS) ⁵⁵ the 'Call for Action for Zero-emissions heavy duty vehicles'/Transport Decarbonization Alliance	Several collaborations and partnerships, for example, Honda for EV mass production, Breakthrough Energy, PGM TPG Rise for climate technology and others in recycling such as US Automotive Materials Partnership	Several partnerships such as the Business Council of Australia and Ai Group, as well as sector specific memberships such as the Green Building Council of Australia, the Australian Logistics Council, the Australian Retailers Association, WIRES and Task Force on Nature-related Financial Disclosure Forum	Several partnerships with a number of organisations including The Energy Council of South Africa, Central Energy Fund (CEF), Industrial Development Corporation, Imperial, Toyota, ArcelorMittal and ITOCHU, focusing on the development and acceleration of the hydrogen economy, as well as Global Alliance Powerfuels (GAP)

Table developed by CGI-Global

⁵⁴ See CEFC, 2022, *Woolworths leads with global first*, www.cefc.com.au/where-we-invest/case-studies/woolworths-leads-with-global-first, accessed 19 February 2023.

⁵⁵ Carbon capture utilisation and storage (CCUS) refers to a suite of technologies that can play a diverse role in meeting global energy and climate goals: see www.iea.org/fuels-and-technologies/carbon-capture-utilisation-and-storage, accessed 9 December 2022.

Case study analysis

In this section we analyse Table 3 further, starting with science-based approaches, GHG profile patterns, risks and opportunities, Net Zero strategies, governance as well as the reporting and disclosures adopted by Holcim, General Motors, Woolworths and Sasol and reported in their sustainability reports.

Science-based approach

Holcim, General Motors, Woolworths and Sasol use science-based approaches for their innovative and technology-driven transformation towards Net Zero. However, the *Sasol Sustainability Report (2022)*⁵⁶ states that the company did not adopt SBTi standards but rather is consulting with SBTi, and therefore Sasol developed and is applying its own decarbonisation standards.

GHG profile

For Holcim, 75% of its carbon footprint falls into the Scope 1 category. Scope 3 emissions are generated from its supply chain and account for 20%, while Scope 2 indirect emissions from electricity used in Holcim's own or controlled equipment account for 5%. Holcim's Net Zero strategy is externally focused and to a large extent dependent on its customers and suppliers. General Motors' highest emission is under Scope 3, which is 98% and is generated from its supply chain. Woolworths' largest carbon footprint is in Scope 3, estimated to be 14 times higher than Scope 1 and 2. However, Woolworths consumes 1% of Australia's electricity and the company has set a target of greening its energy 100% by 2030. Sasol's carbon footprint is spread between the energy and chemical sectors, and Scopes 1 and 2 emit 63% of the group's GHG.

Risks and opportunities

Risks associated with Holcim's Scope 1 operations include floods, excessive heat, high precipitation and waste. Opportunities for the company start with increase in demand for low-carbon building materials. The green cement, called ECOPlanet, and concrete, known as EcoPact, for instance,

are intended to be used in the upgrade of cities, in order that they may withstand the effects of climate change, such as extreme heat and precipitation.

General Motors' risks emanate from its Scope 3 supply chain activities, such as from its mineral supplies of nickel, lithium and cobalt. Its opportunities are based on the extension of manufacturing and sales of electric vehicles and battery technology, beyond light-duty vehicles to other transportation modes such as rail, shipping and heavy-duty trucks.

Woolworths' specified risks include the impact of fire and rain on store operations and the opportunities of increasing resilience in its value chain and supporting customers and the community in climate resilience. In the case of Sasol, its risks are mainly within its high-carbon production lines for both energy and chemicals, and its opportunities are in the development of and support for the local demand of green hydrogen, and the development of the gas economy and sustainable aviation fuel. Providing incentives for new markets are all product-based, while the development of sustainable carbon feedstock and zero investments in new coal reserves are technological- and financial-based. A fundamental challenge for the investor in Sasol is what will happen to the redundant high-carbon assets.

Therefore, it should be clear to boards and governance professionals that risks and opportunities are closely linked to GHG emission patterns. However, care should be taken to balance between risks and opportunities so as to attain the Net Zero balance. Business value is found through robust balanced analyses and decision-making.

Net Zero strategy

Holcim's strategy is naturally embedded in the high emission released from its own products and operations. Its strategy document, *Strategy 2025 — Accelerating Green Growth*, highlights what we have already alluded to above, namely Holcim has

56 Sasol, 2022, *Sustainability Report*, www.sasol.com/investor-centre/sustainability-reporting, accessed 19 February 2023.

Net Zero transition plan and strategies

set out to make green building possible through the first global green cement and concrete: ECOPlanet and EcoPact. Holcim will be driving circular construction to build more with less, through smart designs.

In the case of General Motors, its Net Zero strategy is included with the company's ESG and sustainability strategies. Transitioning to EVs and AVs is at the core of the company's technology and software-driven strategy. Through philanthropic activities, partnerships and collaborations General Motors engages its employees, suppliers and customers to bring them up to speed the technology-driven strategy. For example, helping consumers understand, accept and adopt EV as their choice for personal mobility and collaborating with suppliers to set ambitious targets for the supply chain to reduce emissions, increase transparency and source more sustainable materials.

Woolworths' most immediate target is to address its Scope 2 electricity consumption by 100% greening operations in Australia and New Zealand by investment in renewable electricity generation to grow the availability of green electricity for businesses and the community. Along the value chain, the group's goal of zero food waste going to landfill by 2025 has seen development of partnerships with more than 1,500 charities since 2014.

Sasol's strategy is anchored on greening its production of energy, including provision of sustainable aviation fuel. Its global footprint in a fragmented world, subjects the Sasol Group to various regulations influenced by geopolitics, trade partnerships and challenges in technological transfers and funding, among others, which may not always be supportive of the entity's Net Zero strategies.

Governance

Each of General Motor's five board committees (Governance and Corporate Responsibility Committee, Audit Committee, Executive Compensation Committee, Finance Committee, and Risk and Cybersecurity Committee) has specific ESG responsibilities assigned to it. While all committees review and approve the

Sustainability Report, it is the Governance and Corporate Responsibility Committee which is responsible for ESG initiatives and the Risk and Cybersecurity Committee which reviews strategic operational risk, including climate change. Climate change is considered within the strategic and operational, risk management framework. Two committees, the Audit Committee and the Health, Safety and Sustainability Committee, oversee Holcim's management of sustainability and climate change-related risks. The Risk and Board Sustainability Committees oversee the management of climate-related risks for the Woolworths Group, while the Safety, Social and Ethics Committee (SSEC) provides integrated strategic direction on sustainability, safety, social and ethics matters for Sasol including climate change.

It is imperative to link climate governance with other existing sustainability initiatives, including ESG, diversity, inclusion and equity. Board structure and committees will depend on the company's sustainability strategies and priorities, whether climate action is regarded as risk or opportunity (or both). Governance professionals can help identify and develop appropriate board structures, accountability and disclosure processes.

Reporting, disclosure and collaborations

Accounting and reporting methodologies applied by all four companies are aligned with industry- and country-specific regulations, including Net Zero protocols, which include, but are not limited to the following:

- Greenhouse Gas Protocol
- Science Based Targets initiative (SBTi)
- Task Force on Climate-related Financial Disclosures (TCFD)
- Global Reporting Initiative (GRI)
- Sustainability Accounting Standards Board Framework
- Transportation Standards.

This may include carbon-pricing mechanisms. Carbon pricing is a way of capturing the external costs of GHG emissions, by charging a fee to emitters or offering an incentive for less emissions,

for emission costs borne by the public.⁵⁷ Examples of such payments include damage to crops, healthcare costs from heatwaves and droughts, and loss of property from flooding and sea-level rises.

The case study shows that, as more companies embark on the Net Zero journey, the need for science-based solutions is critical in guiding businesses to genuine climate action versus greenwashing for public relations. Opportunities for a better world reside within our businesses and their ability to make robust innovation, circularity and sustainability decisions, which all demand just governance. While early movers are being rewarded, the question for us all is: What happens if we miss the 2050 deadline? The hope is that this question will focus all our minds on positive and achievable action.



57 See The World Bank, *What is carbon pricing?*, <https://carbonpricingdashboard.worldbank.org/what-carbon-pricing>, accessed 22 February 2023.

Conclusion

Boards of directors, as the stewards of their companies, have a critical role to play in the implementation of Net Zero and moving towards a 45% carbon reduction by 2030 and zero carbon by 2050. This paper has been about providing both policy and other background knowledge, and offering practical solutions to the ongoing implementation of low-carbon strategies. The long-term, multi-disciplinary and collaborative nature of climate action requires that both boards and governance professionals be open to learning and re-learning in their quest for Net Zero, so as to align climate action with other sustainability strategies. The sense of urgency at COP meetings demands more accountability and disclosure. Science-based approaches offer yardsticks for decarbonisation, and GHG stocktakes should be calculated at the beginning and during the Net Zero journey. The case study analysis provided best practices, including GHG profiling, identifying risks and opportunities, finance planning and strong governance structures. We also saw that opportunities exist for businesses through Net Zero innovation, circularity and sustainability, and early movers are being rewarded including enhancing the reputation of their brands.

Practical steps for governance professionals

The following are some practical steps that can guide professionals in Net Zero transitioning:

1. Take a lead with relevant climate education

There is a lot to learn in order to provide climate leadership, from both scientific and business perspectives. While climate activism may have been in existence for close to three decades, formalisation of climate action is still developing. The sense of urgency by stakeholders is putting pressure on businesses to respond, forcing some to engage in public relations stunts and greenwashing of data and activities. Governance professionals can help by taking the lead in compiling relevant and accurate data, which can be used to educate and inform boards, and other stakeholders can also signpost relevant training and resources.

2. Develop and build upon existing ESG activity to inform your Net Zero strategy

Governance professionals should take stock of existing initiatives that relate to the reduction of emissions and the transition to Net Zero, including governing mechanisms for ESG and other sustainability initiatives such as corporate social responsibility commitments. The next step is to align these initiatives, so that they can inform the mitigation, adaptation and financing of low carbon actions. For example, it may be that a business already collects data and metrics, or that it has previously undertaken scenario planning to help it understand risks posed by climate change which can be repurposed for a Net Zero strategy. This creates space for effective strategies and governance. This also helps in identifying blind spots, which may impede Net Zero implementation, such as an over-focus on risk mitigation and therefore assigning Net Zero responsibilities to a risk committee, when perhaps it should also be the responsibility of a sustainability committee.

3. What if we miss Net Zero deadlines?

With less than seven years left to reach the 45% reduction target in 2030 and the fact that a sizeable number of enterprises, including small-to medium-scale businesses, particularly in developing countries, are yet to commit to and disclose their strategies for Net Zero, it may be prudent for governance professionals to ask and answer truthfully the following question: Can we meet the 2030 deadline? If not, can we meet the 2050 deadline or how much reduction can we commit to? Ambitious targets and strategies are needed, but these should not stray into greenwashing or other untruths. Transparent and factual reporting on progress made towards Net Zero targets will help organisations to assess the efficacy of their actions and recalibrate as necessary. It will also build trust among investors and other stakeholders.

4. Identify and engage collaborating partners

The complicated nature of reducing GHG emissions means that organisations are also responsible for emissions emanating from further up or down value chains. This results in taking responsibility for something outside your direct control. Organisations will need to exert their influence on suppliers and respond to increasing demands from consumers for more sustainable practices. As we identified in the case study, 93% of General Motors' emissions are from mines and other community-based organisations. Part of the company's adaptation entails philanthropic work, to educate and build capacity within its supply chain. The governance challenge is that some partnerships may be unequal and each partner may have a different Net Zero vision and goals. It is key that the collaboration creates economic value for all those involved in a partnership and that each partner contributes ideas to support

emission reduction, in order for it to be successful. Governance professionals should therefore know the emission inventory in order to locate, for instance, the company's main suppliers, and work on finding a common Net Zero vision and business alignment with industry or sector GHG stock. This might take more than a casual golf-course networking meeting.

Governance professionals should ensure that appropriate climate financing, whether for funding costs for risk mitigation or adaptation opportunities, or investment into funding initiatives such as green bonds, is aligned to other operations of the entity.

5. Finding appropriate financing

Without appropriate financing, it will not be possible to deliver the Net Zero targets. The global cost for adaptation in developing countries is reported to be US\$300 billion per year by 2030, yet global finance flows were reported to be US\$46 billion in 2020,⁵⁸ meaning that there is a large financial deficit. Financial costs and availability will vary according to sites or locations, country context (such as uncertainty over the size of future climate risks and the level of adaptation needed) and costing of technology options, among many other variables. Boards and governance professionals will need to find the appropriate financing mix to meet Net Zero costs. Knowing what is available in the sector or country's financial market would be a necessary initial step.

The private sector is increasingly being viewed as a source for global climate financing in light of limited public resources.⁵⁹ Various financial instruments are being developed, both direct, such as grants, debts and quasi-equity (both equity and debt), and indirect instruments (such as market bonds). Boards and governance professionals will therefore need to identify the company's motivation, for example, where it wishes to invest and what instruments are more profitable and suitable for the organisation's cashflow requirements.

58 See World Economic Forum, 2022, *Climate adaptation: the \$2 trillion market the private sector cannot ignore*, www.weforum.org/agenda/2022/11/climate-change-climate-adaptation-private-sector, accessed 22 February 2023..

59 Climate Action Network Europe, 2013, *Climate change adaptation and the role of the private sector*.

Glossary of key Net-Zero terms

Adaptation – is adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Anthropogenic emissions – greenhouse gas emissions emanating from human activities

Biennial transparency reports (BTRs) – is a reporting mechanism under the enhanced transparency framework, produced by countries every two years. The first BTRs are due on 31 December 2024.

Carbon-emitting activities – are human social and economic activities which emit carbon into the atmosphere such as, from burning fossil fuels for transport, electricity and heating among others

Climate change – refers to a significant variation of average weather patterns, such as weather conditions becoming hotter, drier or warmer.

Carbon-pricing mechanisms – is a mechanism for capturing the external costs of GHG emissions, by charging a fee to emitters or offering an incentive for less emissions, for emission costs borne by the public

Climate-related Disclosures Standard (S2) – is a reporting standard on climate related financial disclosures, set by the International Standards Setting Board (ISSB). The S2 will be effective for annual reporting periods beginning on or after 1 January 2024.

Conference of Parties (COP) – is the supreme body of the Paris Agreement, which meets once a year to review progress made towards the Convention by member states.

Enhanced Transparency Framework (ETF) – provides guidelines to countries on reporting their greenhouse gas emissions, progress on their NDCs as well as climate change impacts and adaptation.

General Sustainability-related Disclosures Standard (S1) – is a reporting standard on sustainability related financial disclosures. The S1 will be effective for annual reporting periods beginning on or after 1 January 2024.

Global Reporting Initiative (GRI) – is an independent standard setting entity, which develops and delivers global best practices to assist governments, organisations governments demonstrate accountability for their impact on the environment, economy and people.

Green funds – Green funds are mutual funds or other types of investment vehicles that promote socially and environmentally conscious policies and business practices. Green funds might invest in companies engaged in green transportation, alternative energy, and sustainable living.

Greenhouse gases (GHG) – are the atmospheric gases responsible for causing global warming and climate change. The major greenhouses gases (GHG) are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Less prevalent GHGs, but are very powerful are hydrofluorocarbons (HFCs) perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

Greenwashing – is a practice of sending out untrue information, aimed at misleading stakeholders to believe that a company's products or services are climate friendly and have positive impact on the environment

Mitigation – in the context of climate change, refers to human intervention aimed at reducing the sources of greenhouse gases. Examples of such interventions include using fossil fuels more efficiently for industrial processes or electricity generation.

Nationally determined contributions (NDCs) – are submissions made by countries to the UNFCCC Secretariat detailing national targets, policies and measures for reducing their emissions

Net Zero – means ensuring the amount of greenhouse gas we produce equals, or ideally is less than, the amount we remove from the atmosphere thus creating a balance.

Paris Agreement – is the international climate treaty which is legally binding to the 196 signatory countries. It was signed in 2015 in Paris, France and came into effect in 2016.

Glossary of key Net-Zero terms

Science Based Targets initiative (SBTi) – is science-based initiative that defines and promotes of best practices in emissions reductions through target setting methods and guidance to companies. I and promote best practices in emissions reductions and net zero target

Task Force on Climate-Related Financial Disclosures (TCFD) – is an advisory body that develops and provides climate-related financial risk management and disclosure guidelines for use by organisations.

Task Force on Nature-Related Financial Disclosure (TNFD) – is an advisory body that develops and provides nature and environmental risk management and disclosure guidelines for use by organisations.

United Nations Framework Convention on Climate Change (UNFCCC) – is a Convention ratified by 198 countries and are referred to as "Parties" to the Convention. The aim of the Convention is to prevent risky human interference with the climate systems. It came into force in 1994.

Further reading

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