



2022 THOUGHT LEADERSHIP

AN ESG REPORTING METHODOLOGY TO SUPPORT CCS-RELATED INVESTMENT



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1.0 EXECUTIVE SUMMARY

1. The Institute's analysis reveals the extent of the rapidly changing ESG reporting landscape and the challenges faced by those seeking to promote more comprehensive disclosure in relation to CCS activities. As noted in this report, leading reporting frameworks do not necessarily preclude CCS-specific reporting within their existing scope, however, in some instances there remains a disconnect between the level of detail raised through current reporting methods and that sought by investors and wider stakeholders.
2. A developing focus upon the deployment of low-carbon technologies, further global commitments to reduce emissions and the transition to a net-zero economy, will ultimately see investors pay increasing interest to technologies such as CCS and the potential they offer. For organisations with a significant emissions footprint, there are now further, important considerations to be addressed when contemplating the role of CCS under reporting frameworks.
3. For companies, the focus must remain upon selecting and subsequently using those reporting frameworks that are leaders in terms of their approach and the recognition they receive. In recent years, the focus has shifted towards greater use of a select number of voluntary reporting frameworks, with the TCFD perhaps the most recognisable within this category. The Institute's interviews confirmed that investors are focused upon companies' performance within particular schemes and, in some instances, are specifying the reporting frameworks that are to be used by the organisations they invest in.
4. The transition to more mandatory forms of reporting presents a further, important consideration. As policymakers and regulators worldwide specify the use of reporting frameworks, the requirements and nature of the information to be disclosed under these schemes, varies greatly. While it is hoped that these measures will ultimately result in far-greater levels of disclosure and improved investor information, it will be important to ensure that the information provided by companies meets the requirements of all relevant stakeholders.
5. The type of information and level of detail to be provided by organisations, within their reporting and disclosures, is a further critical consideration, in the context of this report and the proposed methodology. Research and the interview responses emphasise the pressure upon organisations to provide more detailed information on their approach to emissions reduction, net zero and the technology choices that will support these activities. As investors and financiers pursue increasingly detailed information around companies' performance in this space, it will be important for organisations to consider the extent of their current reporting and how this reflects their approach to CCS deployment, emissions reduction, and net zero ambitions.
6. A lack of consistency within the methodologies behind the various reporting schemes and consequently the information reported, remains a significant concern to all parties. Companies continue to emphasise the challenge of responding to such a diverse range of schemes and accompanying metrics, while end-users report that few schemes provide the requisite information for making detailed assessments. While the development of sector-specific reporting schemes has addressed these challenges to some extent, a move towards the standardisation of non-financial reporting is expected to offer a more popular and practical solution. Ensuring that schemes of this nature meet the demand for high-quality climate and CCS-specific reporting, will remain an important task.
7. In the context of this dynamic, global outlook, the Institute's proposed methodology seeks to promote a greater level of granularity to CCS-specific reporting, within the boundaries of the current, leading reporting frameworks. Whether this approach is formally incorporated within current frameworks or not, the methodology reflects the level of detail that is now required by investors and those seeking to promote their CCS-specific activities.

2.0 INTRODUCTION

In recent years, the Global CCS Institute (“the Institute”) has undertaken a programme of research aimed at considering the relationship between CCS and ESG rating and reporting schemes. Previous work, notably a 2020 Thought Leadership report supported by the United States Department of Energy (US DOE), has examined the potential connection between the development and scope of ESG ratings, the impacts of a company’s ESG performance and ultimately, whether this will influence future investment in CCS project deployment (GCCSI, 2020). To date, the Institute’s analysis has demonstrated the relatively low levels of awareness of the technology’s mitigation potential within the current ESG conversation and the challenges presented to CCS proponents and investors by the existing reporting pathways.

This study, which has been supported by the King Abdullah Petroleum Studies and Research Center (KAPSARC), seeks to build upon the Institute’s earlier work programme and examine where project proponents and investors may leverage the benefits of their CCS-related investments and project operations, in the context of the wider ESG reporting environment. As part of this, the research has identified and considered the potential routes for the reporting of CCS activities, within current leading ESG schemes and reporting

regimes. For the avoidance of doubt, references within this report to CCS activities relate to the application of technologies that capture, transport and permanently store CO₂.

To complete this project, the Institute has drawn upon its previous commercial work and research activity in this space. The project team has undertaken a detailed programme of research, that included significant literature reviews and a series of semi-structured interviews with representatives from key sectors. In addition to the information generated from interviews used in the production of the 2020 report, the team also conducted new interviews with banks, financiers and organisations with significant carbon dioxide exposure.

The ultimate focus of this analysis, however, has been the development of a CCS-specific reporting methodology, which is presented in Section 4 of this report. Drawing upon the results of the Institute’s analysis and interviews, this methodology seeks to build upon existing reporting pathways, to enable all relevant parties - operators, end-users of the reported information and those designing and developing reporting schemes – to gain a clearer, holistic understanding of the breadth of CCS-specific information that may be reported.



3.0 ASSESSMENT AND REPORTING OF ESG FACTORS

The development and scrutiny of ESG-related information continues to grow apace globally, driven by greater, concerted international and domestic action around sustainability. The adoption of the UN's Sustainable Development Goals (UN SDGs) and the conclusion of the Paris Agreement, together with the development and strengthening of domestic climate policies and social and environmental protections; continue to place greater impetus upon the promotion and consideration of ESG factors. As a result, industry, investors and the wider public now seek far greater levels of disclosure and performance across a wide variety of ESG-relevant metrics.

The demand for greater, more comprehensive reporting of ESG-related factors that are deemed material to a business's core activities, together with ever-closer scrutiny of an organisation's performance, has emerged as a critical aspect of commercial behaviour. The benefit of an ESG-focused strategy, that includes a high-degree of transparency, is now readily apparent to many organisations in offering increased opportunity and reward. The ability to access lower-cost capital, reduced regulatory burdens and greater investment and asset optimization, are just some of the areas which are likely to benefit those companies with a strong ESG proposition (McKinsey, 2019; Goldman Sachs, 2018).

Notwithstanding the drive from several more progressive companies toward the voluntarily adoption of more altruistic and sustainable practices, the rise of socially conscious investment practices, heightened public scrutiny of ESG issues, and the introduction of regulatory requirements, have also increasingly driven the uptake of more widespread reporting. ESG activism on the part

of shareholders and investors, as well as substantial legislative intervention around the scope and quality of company disclosures, are two factors in particular that are anticipated to drive greater response and activity from corporations in the coming years (Skadden, 2021; EY, 2021).

Corporate transparency and the active disclosure of ESG matters has become a significant consideration for the finance and investment community. Several studies, including the Institute's own interviews with representatives from across the sector, reveal investors have increasingly focused their interest upon supporting companies that proactively address ESG issues. One recent report suggests that in the period 2013 to 2018, assets under management (AUM) in ESG mutual funds and exchange-traded funds (ETF) globally, have grown from \$453B to \$760B (BlackRock, 2020). Bloomberg Intelligence reported in February 2021 that even with a substantially reduced growth level, ESG AUM, "could climb to more than a third of the projected \$140.5 trillion global total by 2025" (Bloomberg, 2021).

Within the finance sector, several high-profile champions have also emerged, highlighting an ongoing and future commitment to ESG-focused investment. Particularly active within this sector are the asset managers, with several indicating their intention to increase their scrutiny of ESG issues as part of their investment stewardship activities (Goldman Sachs, 2020). To ensure that these valuations and risk assessments portray an organisation in a favourable manner, companies must increasingly consider their ESG performance and focus upon reporting high-quality, relevant information.

3.1 Ratings schemes and methodologies

The rising significance of ESG issues has been reflected in the broad range of reporting models that have emerged in recent years. To date, a significant number of voluntary and non-voluntary ESG standards initiatives and ESG ratings models have been developed, by a range of industry organisations, governments, research bodies and market data providers.

Perhaps the most prominent and non-proprietary schemes, are those developed by non-governmental organisations or found in national reporting regulations and stock exchange listing requirements. Principal amongst these frameworks is the model proposed within the recommendations of the Taskforce on Climate Related Financial Disclosures (TCFD). Adopted by various organisations worldwide, the TCFD's recommendations now have over 1000 public and private-sector supporters and is to be considered as perhaps the benchmark in corporate climate change reporting best practice. Other standards initiatives, developed by the Principles for Responsible Investment (PRI), the Carbon Disclosure Project (CDP), the Sustainability Accounting Standards Board (SASB), the Global Reporting Initiative (GRI), and Integrated Reporting (IR) also continue to receive considerable support from industry and investors worldwide.

A further, important category of reporting schemes are the proprietary, commercial models developed and offered by numerous specialist providers. Primarily aimed at providing rankings and ratings of companies and investment funds' ESG performance, these schemes have emerged as an important part of the reporting landscape. While new models continue to be developed, several well-known market analysts and research organisations, including ISS, S&P, Sustainalytics, MSCI and FTSE Russell, all offer well-regarded and widely utilised ratings products.

Companies will likely find themselves covered, voluntarily and involuntarily, by various ratings schemes. In several jurisdictions, regulators are now promoting the use of specific reporting frameworks, particularly when it comes to reporting on their carbon footprint and the climate change impact of their operations. In the United Kingdom, the Financial Conduct Authority (FCA) has already announced new rules requiring companies with a premium listing to disclose, on a "comply or explain"

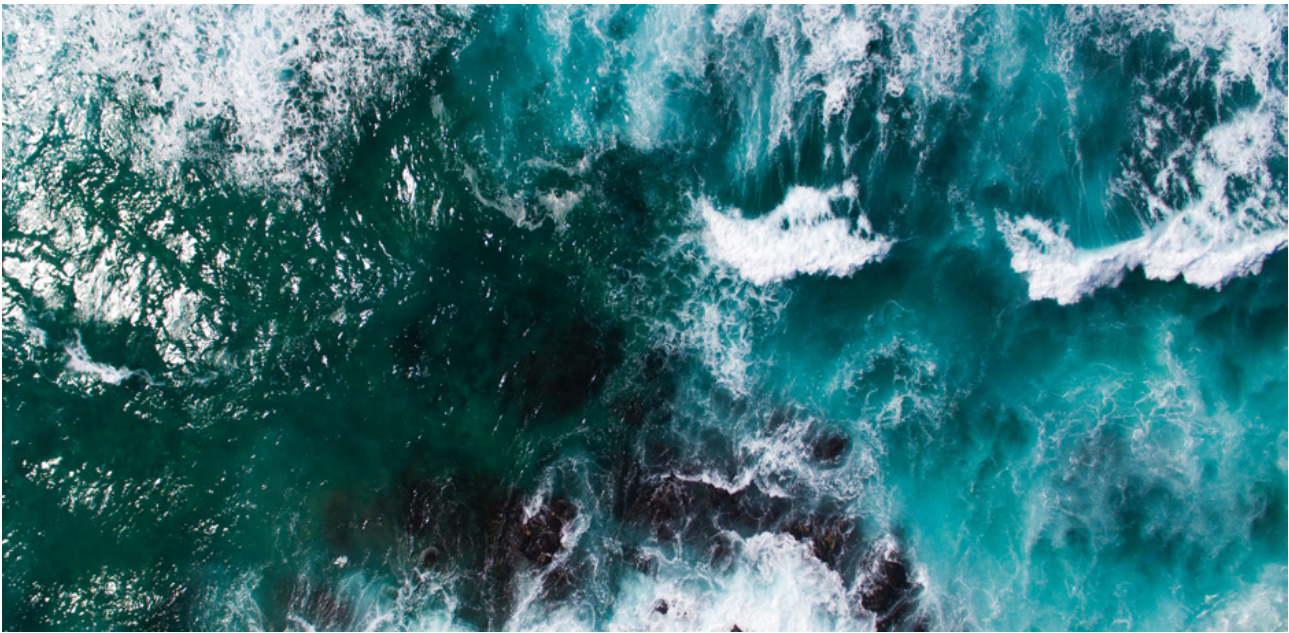
basis, their climate risks in accordance with the TCFD's recommendations (SEC, 2021). Similar provisions have been introduced in New Zealand, where roughly 200 financial entities will be required to start making disclosures in line with the TCFD's recommendations from 2023. Several other governments around the world are considering their position regarding sustainability disclosures, with the US Securities and Exchange Commission now suggesting they too may be willing to adopt provisions requiring the disclosure of ESG-related risks (SEC, 2022).

Companies are increasingly volunteering to adopt international ESG reporting standards, with a view to obtaining a competitive advantage, or in response to increased shareholder and investor pressure (OECD, 2020; PWC, 2021). Shareholder resolutions, on the issue of greater and more detailed disclosure, appear to be on the rise across many jurisdictions and they are resulting in considerable pressure upon companies to adopt more detailed reporting practices (Reali et al, 2021). Several of the organisations interviewed by the Institute, however, also emphasised their willingness to voluntarily report against multiple voluntary standards, as well as engage with commercial ratings providers, as part of their efforts to distinguish themselves from competitors and satisfy the requests of key investors.

Ultimately, the shift in company and investor perspectives has led to a fundamental change in approach to reporting methods. For many organisations a more conservative model of reporting, typified in the approach adopted by many large corporations to-date, is rapidly being replaced with one that seeks to proactively address ESG factors through careful reporting and ratings performance.

3.2 Climate Change rating and reporting methodologies

Environmental factors have proven critical within assessments of ESG performance. The environmental pillar includes consideration of a wide variety of factors, including amongst others, emissions of CO₂ or CO₂ equivalents, energy and resource consumption, waste production and water withdrawal and use. While it is anticipated that all these environmental factors will continue to play a significant role in ESG assessments, climate change in particular, has become synonymous with considerations within this category.



Growing evidence that the physical and transition risks associated with climate change will affect the operations, financial performance and reputation of companies, as well as society and the planet more broadly, has led to heightened interest in investors and the wider public in the climate related performance of their investment portfolios.

Investors' awareness and concerns relating to the material and non-material financial risks posed by the climate transition has become the driving force behind the steady increase in organisations' environmental pillar reporting and assessment activities. E pillar ratings and disclosures are now being used by investors to understand how a company aims to align with a low-carbon economy, its low-carbon transition pathways and material climate related financial risks. This trend was highlighted in the 2021 letter to CEOs from the chairman and CEO of BlackRock, the world's largest investment manager, which stated that *"no issue ranks higher than climate change on our clients' lists of priorities"* (BlackRock, 2021).

With global sustainable investments increasing by 15% (to USD 35.5 trillion) from 2018 to the start of 2020 across Europe, the United States, Canada, Australasia, and Japan, the Institute's interviews with industry and the financial sector also highlight how assessments and disclosure of climate risks and management of risks are increasingly being required by shareholders, investors and other stakeholders (GSIA, 2020). Many of the world's largest corporations have already taken steps to address these challenges, with almost 90 per cent of S&P500 companies now reporting on ESG issues and/or climate-related financial risk (ERM, 2020).

3.2.1 Climate Change within ESG Ratings Schemes

Several ESG ratings schemes now provide ratings and rankings of companies and investment funds' performance on a variety of climate related metrics. Sustainalytics, MSCI, Dow Jones, S&P Global and FTSE are amongst the notable schemes emerging from the literature and the Institute's interviews with industry and the finance sector for this study.

The range of providers and schemes in the climate space, however, has led to some concerns regarding homogeneity and consistency. Users of these schemes continue to emphasise variations in the scope of metrics, measurement criteria and scoring methodologies, which ultimately result in widely differing ratings and rankings that offer limited comparability (OECD, 2020). Differences in methodologies and E scores may, in some instances, be attributed to the underlying rationale and commercial nature of some schemes, with each scheme providing relative ratings derived from the risk adjustment of a particular sector against chosen metrics. Ultimately, all schemes rely on the extent and quality of information provided by companies in response to disclosure requirements, which impact how information is compiled and reflected in the final score or ranking.

3.2.2 Climate change within ESG reporting standards and frameworks

The work of the Taskforce on Climate Related Financial Disclosures (TCFD) is considered a pioneering effort towards establishing both guidance and standards for climate and emissions related disclosures. Key reporting

standards and frameworks cited in the literature and the Institute's interviews include, among others, the TCFD recommendations, Carbon Disclosure Project (CDP), Sustainability Accounting Standards Board (SASB), Global Reporting Initiative (GRI), and the Climate Disclosure Standards Board (CDSB).

In addition, stock exchanges have also begun issuing guidance on E pillar reporting, through their own listing rules and guidance documents, which, in some instances, require mandatory compliance with specified global reporting frameworks such as the TCFD. Examples of stock exchanges with climate reporting requirements and guidance include the London Stock Exchange's Climate

Reporting Guidance, the US Securities and Exchange Commissions' forthcoming Climate Disclosure Rules, the Bombay Stock Exchange's Guidance Document on ESG Disclosures and the NASDAQ ESG Reporting Guide 2.0 (Global CCS Institute, 2020).

While all reporting frameworks examine how companies integrate climate risks and opportunities into their financial and non-financial reporting and disclosure, once again, the rationale underpinning each framework can differ. Divergent objectives are reflected in the scope and variety of metrics assessing what each framework considers 'material' to a company in the context of the environment and climate change.

MATERIALITY OF CLIMATE CHANGE CONSIDERATIONS WITHIN ESG RATINGS, REPORTING STANDARDS AND FRAMEWORKS

Analysis confirms that investors are increasingly seeking out companies which proactively address 'material' ESG risks, relevant to their financial performance (CERES, 2019; Eccles and Klimenko, 2019). There is no single definition of materiality and what constitutes a 'material' ESG risk differs between various ESG schemes and reporting frameworks, according to the scope and objectives of the scheme or framework in question. However, in considering the various definitions for the term, it would appear that materiality broadly refers to issues that are relevant to or impact a company, typically from a financial perspective, but also from a stakeholder perspective. Material issues impacting a company can arise from a variety of aspects of a company's operations such as accounting, reporting, financial, legal, reputational and more recently, environmental and climate change-related activities.

A study on environmental reporting highlights that metrics assessing 'material' environmental or climate change considerations across ratings schemes and reporting standards and frameworks may also be categorised according to the definitions of financial or stakeholder materiality (OECD, 2020).

An example of how companies may determine likely material sustainability issues, on an industry-by-industry basis, is found in the work of SASB (2020). The SASB 'Materiality Map', is designed to assist organisations in identifying and prioritising ESG issues in accordance with their industry sector. The tool is aimed at identifying those issues that are

likely to impact the company's financial condition or operating performance and is therefore important to investors. GHG emissions are a critical consideration across many industry sectors within this Map.

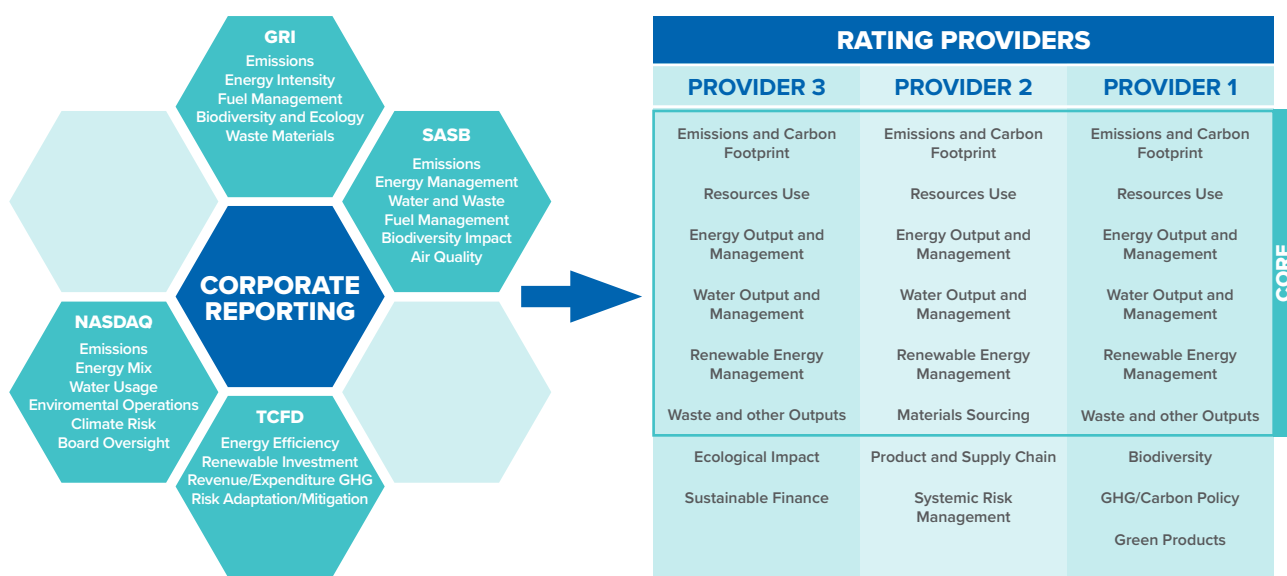
Similarly, the outlook of the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations on materiality provides for the reporting of climate related metrics that focus on the financial impact on the company. The framework provides for standardised disclosures on aspects such as revenue, expenditure, assets and liabilities and capital financing, alongside qualitative information on strategies and processes. As noted in the TCFD Implementation Guide developed by the CDSB and SASB, the approach of the TCFD stems from the recognition that *"Going green" is not just a matter of "saving the planet"; it is about pursuing economic growth and development that is strategic, resilient, and sustainable"*. The underlying basis for the TCFD's approach is that *"a coordinated global transition to a low-carbon and climate-resilient economy is projected to involve significant financial opportunities"* (CDSB and SASB, 2021).

Other voluntary models such as the International Integrated Reporting Council (IIRC, 2013), and Climate Change Reporting Framework (CDSB, 2019), also provide guidance that seek to assist companies in reporting climate change related information of value, or 'material' to investors and the wider insurance community.

3.2.3 The scope of metrics covered by ratings schemes, reporting standards and frameworks

Despite differences in objectives and definitions of materiality, it is possible to determine a common set of categories of climate change related metrics, which now appear to represent the baseline for disclosures and assessments of climate change related factors impacting a company. Figure 1 below, which was developed by the OECD, provides an overview of the categories of reporting that can be found across various reporting frameworks and ESG ratings schemes. The figure also illustrates how from amongst the various categories, there emerges a core set of metrics that are used by ESG ratings providers (analysed by the OECD) to arrive at E pillar scores.

Figure 1: Categories of reporting amongst corporate reporting frameworks and ESG ratings schemes and the core set of metric categories used by ESG ratings schemes¹ (OECD, 2020).



Note: Summary based on publicly available information and complementary analysis.
 Source: Bloomberg, MSCI, Thomson Reuters GRI, SASB, TCFD, and NASDAQ. OECD analysis.

¹ Provider 1, 2 and 3 in Figure 1 refers to the ESG ratings providers/schemes analysed by the OECD in its 2020 study.

The reporting of a company’s CO₂ footprint is a key aspect of many of the standards and frameworks focused upon climate change-related reporting. The ratings, standards and frameworks highlighted previously, for example, all possess metrics covering the measurement of Scope 1, 2 and 3 GHG emissions.

In addition to CO₂ footprint, most rating schemes also provide ratings based on metrics that take into account renewable energy and climate change mitigation activities. These metrics are not only aimed at considering emissions and climate change, but also reflect upon how a company is preparing to deal with the climate transition and related risks and opportunities in the future. Metrics of this nature have become key factors for investors, when seeking to align their portfolios with the low-carbon transition, as well as achieving specific climate change objectives.

In a manner similar to some of the commercial ESG ratings, reporting standards and frameworks also incorporate metrics relating to the impact of climate related risks on financial performance of the company (i.e., climate risk management and climate-related opportunities), the external impact of the company (i.e., emissions) and relevant opportunities in the context of the climate transition (such as the transition to renewable energy) (OECD, 2020).

Beyond the reporting of GHG emissions, several reporting standards and frameworks incorporate a broader range of metrics when compared to the more commercial ESG ratings schemes. These reporting schemes and frameworks cater to a wider audience of potential investors and shareholders and attempt to provide a more fundamental understanding of the environmental performance of a company for the benefit of these stakeholders. As such, these models

also emphasise and provide guidance on the forward-looking aspects of climate risks and the transition to a low carbon economy (OECD, 2020). Examples of considerations and metrics in existing standards and frameworks include potential costs associated with carbon emissions, such as earnings at risk and future

carbon prices, physical climate related risks, potential regulation, risk management processes and strategies to align the business with achieving net zero emissions.

Table 1 highlights a variety of key ratings schemes, reporting standards and frameworks in widespread use, with a description of their objectives and coverage.

Table 1: Scope and objectives of selected international ESG reporting frameworks and commercial ratings schemes with climate change indicators and metrics

Voluntary or non-governmental organisations rating and reporting schemes.

INITIATIVE	PURPOSE AND OBJECTIVES	SCOPE OF CLIMATE INFORMATION
Task Force on Climate-related Financial Disclosures (TCFD) Global	<p>The TCFD was created by the Financial Stability Board, to enable companies to identify and disclose relevant information on climate, energy, waste and water management in their financial reporting, which would be useful to the wider finance and investment community.</p>	<p>The TCFD recommendations cover four thematic areas relevant to companies, namely, governance, strategy, risk management and metrics and targets. The recommendations touch on 28 climate related key issues with financial implications for the company; complementary guidance on management and processes are also provided. Examples of proposed disclosures include Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emissions, and the related risks.</p>
Carbon Disclosure Project (CDP) Global	<p>A global disclosure system that enables companies, cities, states and regions to measure and manage their environmental impacts.</p> <p>CDP uses data submitted to provide an A-D rating based on the level of disclosure, the awareness of climate issues, management methods and progress on acting on climate change.</p>	<p>Provides for sector-specific questionnaires covering, energy use, renewable energy consumption (not defined), GHG emissions (Scope 1-3), investments in emissions reductions activities and technology and other information on risk management on climate change risks and opportunities.</p>
IPIECA Oil and gas industry guidance on voluntary sustainability reporting Global	<p>A reference tool for organisations in the oil and gas industry which assists companies shape the structure and content of their corporate reporting on sustainability for internal and external stakeholder audiences. The guidance supports improved reporting and management of climate-related risks, but does not directly generate any ESG scores of the type generated by other schemes reviewed.</p>	<p>Covers 21 sustainability issues and 43 indicator categories. The climate change issue category comprises metrics covering climate governance and strategy, climate risks and opportunities, lower-carbon technology and greenhouse Gas emissions, methane emissions, energy use and flared gas.</p>
CDSB Climate Change Reporting Framework Global	<p>A voluntary reporting framework designed to elicit material climate-change related information for investors and financial markets through mainstream financial reports.</p>	<p>Provides guidelines across 12 categories for reporting on environmental and climate change matters. In the climate change context, reporting categories cover, among others, environmental policies, strategies, targets, risks and opportunities, sources of environmental impact, including greenhouse gas emissions, future outlook on the basis of the environmental impacts, risks and opportunities.</p>

INITIATIVE	PURPOSE AND OBJECTIVES	SCOPE OF CLIMATE INFORMATION
UN PRI Reporting Framework (PRI) Global	<p>The PRI works to understand the investment implications of ESG factors and to support its international network of institutional investor signatories in incorporating these factors into their investment and ownership decisions. On the basis of their fiduciary duty to act in the long-term interests of beneficiaries, signatories commit to six Principles of Responsible Investment which offer guidance on incorporating ESG issues into investment practice.</p>	<p>Climate change related indicators are reported under the Investment and Stewardship Module. Structured as MCQs, the questions are anchored to the 11 TCFD recommendations; topics covered include climate related risks and opportunities, risk management processes and climate targets and metrics.</p>
Sustainability Accounting Standards Board (SASB) Global	<p>SASB is a non-profit organisation that assists companies manage their sustainability reporting, in a manner that is material to investors. The 'Materiality Map' helps an organisation to identify the relevant industry-specific standards, of which there are 77, in order to identify the minimal set of financially material sustainability topics and their associated metrics for the typical company in an industry.</p>	<p>Sector-specific standards contain between 10 and 29 environmental metrics per sector. In the context of climate change, reporting requirements include greenhouse gas emissions (Scope 1, 2 and 3) and strategies to manage emissions.</p>
Global Reporting Initiative (GRI) Global	<p>The GRI helps business and governments worldwide to understand and communicate their impact in relation to critical sustainability issues, including climate change. Organisations can become "GOLD" members to demonstrate active support for GRI.</p>	<p>The GRI Standards comprise global best practice for reporting on a range of topics relating to the environmental, social and economic impact of companies. There are 8 topic-specific standards relating to the environmental impact of companies; the topic standards covering climate change include the energy (GRI 302) and emissions (GRI 305) standards.</p>
Asset Owners Disclosure Project Global	<p>The Asset Owners Disclosure Project rates and ranks the world's largest institutional investors on their response to climate-related risks and opportunities. The project publishes investment grade-type ratings and league tables for the largest pension funds, insurers and asset managers based on public data and responses to questionnaires.</p>	<p>Provides a questionnaire centred around the TCFD framework requiring companies to disclose information relating to, among others, targets and asset allocation policies for low carbon assets, investments supporting a low-carbon transition, including low-carbon assets, climate impact assets and green finance, climate related targets to manage climate risks and opportunities and aggregate or specified portfolio emissions intensity.</p> <p>Value of investment in low-carbon assets, portfolio emissions intensity account for circa 25% of score.</p>
Transition Pathway Initiative (TPI) Global	<p>A global network of asset owners, supported by asset managers. The coverage of the initiative extends to over 45 investors representing over \$14 trillion combined Assets under Management and Advice.</p>	<p>Companies are assessed under 2 frameworks relating to companies' governance/management of their greenhouse gas emissions and risks and opportunities related to the low-carbon transition (Management Quality) and how companies' carbon emissions compare with the international targets and national pledges made as part of the UN Paris Agreement (Carbon Performance). Individual indicators and metrics under the two frameworks correspond with the TCFD's recommendations.</p>

Commercial ratings schemes

INITIATIVE	PURPOSE AND OBJECTIVES	SCOPE OF CLIMATE INFORMATION
MSCI ESG ratings Global	Investment grade-type ratings on companies to help investors understand ESG risks and opportunities and integrate these factors into their portfolio construction and management process. Ratings are provided relative to industry peers	<i>Carbon emissions, product carbon footprint and opportunities in clean tech</i> are 3 of the metrics covered by the MSCI 35 ESG Key Issues framework.
S&P Global Ratings Global	S&P provides credit ratings across a broad spectrum of organisations, including corporates, financial institutions, sovereigns and insurance companies. ESG risks are considered within these ratings.	Specific energy and climate metrics not listed but likely to cut across a number of risk drivers considered
Sustainalytics Global	Sustainalytics is an independent ratings agency specialising in ESG ratings. Companies such as Morningstar, the global investment research and management services firm, use Sustainalytics as a source for ESG ratings.	ESG ratings framework is focused upon 20 material ESG issues that are underpinned by more than 250 indicators. A specific Carbon Risk Rating is provided.

Stock exchange listing requirements

INITIATIVE	PURPOSE AND OBJECTIVES	SCOPE OF CLIMATE INFORMATION
London Stock Exchange (LSE): Guide to Climate Reporting United Kingdom	Provides guidance to assist listed companies with integrating climate risks and opportunities within operational decisions and complying with reporting obligations, based on the LSE's mandatory requirement that listed companies report in line with the TCFD recommendations.	Aligned with the TCFD recommendations, the guidance requires companies to disclose aspects such as their carbon management practices, climate risks and opportunities and risk management processes. The Guidance also establishes a climate governance score for London-listed companies, which is based on the TPI methodology.
Australia Securities Exchange (ASX): Listing Requirement 4.10.3 Australia	Listed companies must prepare and publish a corporate governance statement which outlines their governance practices as compared to the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations (ASX Corporate Governance Principles).	Requires disclose of any material exposure to environmental or social risks and associated risk management processes. Metrics are not specified.
United States, NASDAQ ESG Reporting Guide 2.0 (2019) United States	ESG reporting is not required as a listing rule, however, the NASDAQ has developed written guidance for public and private companies on ESG reporting.	Promotes disclosure, on a "respond or explain" basis and establishes 17 metrics across 10 categories which assess environmental and climate related performance, including GHG emissions, emissions intensity, energy usage, mix and intensity. Guidance on the methodology for measuring each metric is also provided.

The Institute's review of a range of ESG schemes and reporting standards revealed that companies seeking to deploy CCS, to mitigate risks and enable opportunities for their operations in the context of the climate transition, may report such measures within the metrics and disclosure requirements of existing

schemes and standards. Several of the schemes and frameworks identified, such as the CDP, IPIECA Oil and gas industry sustainability reporting guidance, GRI, SASB and Corporate Knights Global 100 rankings, include explicit requirements to report a company's CCS related initiatives.



**COMPANIES TO PROVIDE
EVER-GREATER LEVELS OF
SOPHISTICATED WITHIN THEIR
REPORTING AND DISCLOSURES.**

3.3 Emerging influences on the ESG sector

The ESG sector continues to prove a dynamic space, with frequent updates to existing reporting and assessment frameworks and the regular emergence of new products and schemes aimed at providing greater sectoral review and analysis. The rapid pace of change to the various ESG-related frameworks is also reflected in the knowledge and composition of the end-users of this information. A far-broader range of stakeholders are now focused upon ESG-related performance, challenging companies to provide ever-greater levels of sophistication within their reporting and disclosures.

Notwithstanding the rapid pace of change within the ESG reporting landscape, there are several emerging drivers, that are likely to prove important for those seeking to invest in or operate CCS projects.

3.3.1 Mandatory reporting of climate-related factors

While heightened pressure in the form of financial risk, shareholder intervention, or the threat of litigation, has increasingly motivated commercial organisations to adapt their approach to reporting in some instances, regulatory intervention will likely prove a significant driver for more robust reporting activities. As highlighted in the previous section, several jurisdictions around the world have now proposed or introduced substantive changes to policy and regulation that will impose more formal regulatory requirements for ESG disclosures and investment decisions, as part of broader financial reporting obligations.

Climate-related performance remains a critical topic for both industry and investors alike and is one area where regulators continue to propose greater levels of disclosure through the introduction of reporting obligations. Analysis highlights the considerable progress being made globally, as an increasing number of countries introduce new regulations and policy initiatives aimed at increasing and improving climate-related disclosures. Several recent reports highlight the progress in Europe, the United States, Asia Pacific and South Africa in particular, as jurisdictions where companies continue to demonstrate greater maturity in their reporting, by virtue of the proactive stance taken by national regulators and market authorities (IGCC, 2021; EY, 2021).

A recent statement from the Group of Seven (G7) finance ministers, confirmed that there continues to be support for *“moving towards mandatory climate-related financial disclosures, that provide consistent and decision-useful information for market participants”* (G7, 2021). The ministers’ communiqué emphasised the role of domestic regulatory frameworks in supporting this objective, but also noted that such disclosure frameworks should be based upon those recommended by the Task Force on Climate-related Financial Disclosures (TCFD).

In Australia, statements from key industry regulators the Reserve Bank of Australia (RBA), the Australian Securities and Investment Commission (ASIC) and the Australia Prudential Regulation Authority (APRA) are illustrative of this shift. All three of regulators have in recent years emphasised the inclusion of ESG matters, and climate change in particular, in directors’ decision-making and disclosure procedures. While there is now a greater expectation for a far higher degree of climate-related disclosure within these traditional reporting frameworks, some stakeholders are suggesting that the voluntary disclosure system is now reaching the limits of what it is

capable of delivering. Work is now underway, amongst some investment groups, to support the development of formal climate risk disclosure frameworks. A recent report from the Investor Group on Climate Change (IGCC), a leading Australian investor group, has recommended that a mandatory climate-related risk reporting scheme be established as soon as is practicable (IGCC, 2021).

In the UK, the government and related industry regulators have also highlighted the need for companies and asset owners to provide more detailed climate-related disclosures. The release of a formal roadmap, in November 2020, set out the government’s approach towards an indicative path towards mandatory climate-related disclosures in the UK, that are aligned with the recommendations of the Taskforce on Climate related Financial Disclosures (TCFD). As highlighted previously, this commitment has now been reinforced by the Financial Conduct Authority’s (FCA) introduction of new rules requiring premium listed companies to disclose their climate risks in accordance with the TCFD’s recommendations. It is anticipated that the FCA will eventually transition these rules from the current “comply or explain” reporting standard, to require full mandatory disclosure from a far broader group of companies.

The European Union’s Non-Financial Reporting Directive (NFRD) introduced reporting rules for specified large corporations and requires the annual reporting of sustainability-related information. The Commission also introduced further, non-binding guidelines to assist with climate-related reporting under this Directive that sought to align companies’ reporting with the TCFD’s recommendations. The Commission’s Corporate Sustainability Reporting Directive (CSRD), which was adopted in April 2021, will go-beyond the scope of this existing framework, however, to introduce far more extensive reporting requirements for all large companies and all companies listed on regulated markets. Once in force, the Directive will require companies to reporting according to new sustainability standards, that are to be developed by the European Financial Reporting Advisory Group (EFRAG). Significantly, the new Directive emphasises that any new reporting standards *“should be developed in constructive two-way cooperation with leading international initiatives, and they should align with those initiatives as far as possible”* (European Commission, 2021).

Although commentators had previously noted the limits of disclosure requirements in the United States, the President’s May 2021 executive order on climate-related financial risk, emphasised the current administration’s commitment to *“consistent, clear, intelligible, comparable, and accurate disclosure”* and established a platform for

further US regulatory intervention (CERES, 2021; White House, 2021a). Until recently, this position had not been supported by the Securities and Exchange Commission (SEC), which had proven hesitant to mandate any form of sustainability disclosure. These views have appeared to shift, however, with the Commission proposing new rule amendments in March 2022, aimed at ensuring greater disclosure of climate-related information (SEC, 2022).

The impact of further widespread mandatory disclosure and reporting obligations will present both challenges and opportunities for companies and financiers. For the investment and finance community, which finds itself increasingly under pressure to take decisions that reflect a greater focus upon sustainability and climate change, access to high-quality and readily comparable information is paramount. Many from this sector anticipate that regulatory intervention, of the kind proposed and now enacted in several jurisdictions worldwide, will drive an increase in both the quality and quantity of information upon which they may base investment decisions (FTSE Russell, 2021; BlackRock 2020).

The Institute's interviews confirmed these views, with several representatives from the sector highlighting their desire for greater access to standardised climate-specific information. In some instances, interviewees thought that the requirement to use the well-established benchmark reporting and disclosure schemes would lead to greater consistency and availability of data. Interviewees identified European regulators as leaders in this space, emphasising the likely positive impact of the recent steps taken to mandate more stringent climate reporting obligations, for example, through the development of the Non-Financial Reporting Directive (NFRD).

Corporations with a significant CO₂ footprint are likely to face greater scrutiny under a shift to more mandatory forms of climate-related reporting and disclosure. In addition to the more formal obligations to make increasingly detailed and broader-ranging disclosures around their emissions footprint and mitigation efforts, many corporations will also be required to consider the impact of their operations where they operate across multiple jurisdictions.

For many large organisations these reporting practices will likely prove familiar, with many already reporting under a wide variety of voluntary and commercial ratings schemes. In some instances, companies are providing this information, or more detailed tailored reports, in response to demands from their shareholders and

investors. One company interviewed by the Institute, suggested that they would be prepared to proactively adopt newer and more extensive reporting practices, in anticipation of further regulatory developments or to position themselves as leaders in a particular market.

Notwithstanding these opportunities, the introduction of mandatory requirements also introduces new risks for companies. Recent studies have highlighted that failure or inability to comply with requirements is likely to prove a concern, particularly where new requirements are accompanied by possible sanctions and/or enforcement (Baker McKenzie, 2021).

3.3.2 Net Zero under the 'E' Pillar

Global commitments under the Paris Agreement, to limit global warming to well below 2, preferably to 1.5 degrees Celsius, have been a defining moment in terms of global climate ambition and a significant contextual driver for the transition of the world's economies towards net-zero emissions. The 2018 Special Report on 1.5 Degrees, from the Intergovernmental Panel on Climate Change (IPCC), offered a stark and ultimately critical scientific assessment of the likely impact of global warming beyond 1.5 degrees, which underpinned the need for a rapid decrease in emissions to net zero by 2060 (IPCC, 2018).

As a direct result of this increased pressure for climate change action, the world has witnessed a wealth of commitments to net zero emissions from both government and the private sector. While in many instances, these commitments are based in national policy initiatives, some governments have enshrined their commitment to net zero within law. The International Energy Agency's 2021 Roadmap report identified 44 countries and the European Union that had announced net zero emissions targets by April 2021 (IEA, 2021), however, more recent assessments demonstrate that this number has increased and 18 of the G20 economies alone, have now adopted net zero commitments (ZeroTracker, 2021). It is now suggested that over three quarters of global GDP is covered by net zero commitments (ZeroTracker, 2021).

For the finance sector, net zero commitments have heightened the need to align long-term investments with the reality of a 1.5-degree world and investors and banks are now placing far greater emphasis upon net zero in their investment and lending strategies. The focus upon net zero has also proven an important means of reconciling the high-level ambition of the Paris Agreement into more tangible assessments upon which portfolio risk can be



measured (Robins, 2021). The establishment of the Net-Zero Asset Owner Alliance in 2019, at the UN Secretary General's Climate Action Summit, is an example of this focus and now 61 institutional investors have formally committed to transition their investment portfolios to net-zero greenhouse gas (GHG) emissions by 2050 (UNEP FI/PRI, 2021).

The role of CCS in achieving net zero is becoming increasingly clear. While achieving net zero emissions will require many specific actions, in all sectors, over multiple decades; CCS is frequently cited as an essential part of the lowest cost pathway. The IEA suggests that limiting global warming to 2°C requires installed CCS capacity to increase from around 40 Mtpa of CO₂ today to over 5,600 Mtpa of CO₂ by 2050, which the Institute's own

analysis suggests will necessitate between USD\$655 billion and USD\$1,280 billion of capital investment (IEA, 2021; Rassool, 2021). While investors have previously expressed skepticism as to the role CCS will play in addressing climate change, the magnitude of the net zero challenge and increased policy support for the technology is resulting in a more positive outlook for many (Hawker, 2021).

In the context of this report, it is perhaps unsurprising to note that net zero commitments are now an important consideration within an ESG reporting context. How CCS subsequently fits within an organisation's approach to net zero, will therefore be a further consideration for both companies and investors alike when it comes to reporting and disclosure. The Institute's interviews

with representatives from the finance sector confirmed the importance of net zero, with several respondents emphasising their scrutiny of clearly defined net zero targets, when making investment decisions. The ability of an organization to ultimately demonstrate how planned CCS activities will achieve their net zero commitments, where the technology has been identified within their reporting and disclosures as a key mitigation response, will prove critical for many investors.

For companies with a significant CO₂ footprint, reporting and disclosures of this nature are not without challenge. Commentators and responses from the Institute’s interviews, highlight the risks, both reputational and potentially legal, where organisations intentionally or unintentionally make disclosures which may overstate the role of CCS.

With the rise in corporate commitments to achieve net zero emissions, there has been increasing concern regarding the consistency of approaches being used by companies to achieve their targets. This concern was also echoed in several of the interviews conducted by the Institute which revealed that the lack of a common understanding or a definition of net zero has proved challenging when setting targets and evaluating net zero strategies, in light of how each sector’s approach towards decarbonisation can differ. This has resulted in calls for robust, measurable and science-based frameworks for

setting net-zero targets which, when implemented, can realistically deliver emissions reductions in the economy on a long-term basis. Further, it was also deemed necessary to enable investors and other stakeholders to evaluate the progress and performance of companies against their net zero targets.

In response to these concerns, various global organisations and stakeholders have developed standards and protocols specifically aimed at providing guidance on setting corporate net zero targets and assessing progress against targets in recent years. Notable examples of such schemes include the Net Zero Asset Owners’ Alliance Target Setting Protocol, Climate Action 100+ Net Zero Company Benchmark, the Science Based Targets Initiative’s Corporate Net Zero Standards and the IIGC Net Zero Standard for Oil and Gas.

Table 2 provides an overview of these schemes and standards, the context and objectives underpinning each scheme and the types of target-setting requirements, indicators for assessing progress against targets and disclosure requirements provided in each standard. In the context of CCS, several of these initiatives explicitly require disclosure of CCS related initiatives and the technology’s contribution towards achieving a company’s targets.

Table 2: Overview of selected Net-Zero disclosure frameworks and target-setting guidance

STANDARD/ SCHEME	DESCRIPTION	PURPOSE AND OBJECTIVE	SCOPE AND COVERAGE
Inaugural 2025 Target Setting Protocol UN Convened Net Zero Asset Owner Alliance	A global alliance of 61 institutional investors representing \$10 trillion assets in management. By joining the Alliance, members make a public commitment to transition investment portfolios to net zero emissions by 2050.	By joining the Net Zero Asset Owners’ Alliance, members make a public commitment to transition investment portfolios to net zero emissions by 2050 and report progress achieved every five years. The 2025 Target Setting Protocol is the Alliance’s recommended approach to target setting and reporting on progress towards greenhouse gas reductions between the period 2020-2025.	The Protocol establishes a target setting structure covering 4 broad themes, namely, engagement, financing transition, sector and sub portfolio targets. The targets cover asset owners’ own Scope 3 emissions. Examples of target setting and reporting requirements covering the 4 themes include action targets on policy advocacy, report on progress on climate positive investments and intensity-based reduction targets for oil and gas, aviation, shipping, heavy and light duty road.

STANDARD/ SCHEME	DESCRIPTION	PURPOSE AND OBJECTIVE	SCOPE AND COVERAGE
Corporate Net Zero Standard Science Based Targets Initiative	A collaboration between the CDP, the UN Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) promoting corporate target setting based in climate science and providing independent assessment and approval of company targets.	Provides a standardised approach for corporate net zero targets, including guidance, criteria and recommendations to support companies in setting targets in line with the SBTi.	Provides a definition for corporate net zero and establishes 4 key elements of corporate net zero targets, namely, near term, long-term science-based targets, beyond value chain mitigation and neutralisation of residual emissions. The standard provides guidance on setting targets for each of these aspects and is currently in the process of developing sector specific guidance on target setting.
Climate Action 100 Net Zero Company Benchmark Climate Action 100	A collaboration between five global investor groups and initiative, including the Asia Investor Group on Climate Change, Ceres, Investor Group on Climate Change, the Institutional Investors Group on Climate Change (IIGCC) and the Principles for Responsible Investment (UN PRI), representing \$60 trillion in assets and over 80% of global industrial emissions.	Tracks corporate progress towards developing and implementing transition plans that detail how companies fulfill net zero commitments. Primarily a disclosure framework, it is used to assess companies against the 3 high-level goals of the Climate Action 100 initiative, which involves emissions reduction, governance and disclosure.	Companies are assessed against 10 indicators, which include, among others, net-zero GHG emissions by 2050 (or sooner) ambition, short-term, medium-term and long-term GHG reduction target(s), Decarbonisation strategy, Capital allocation alignment, Climate policy engagement and TCFD disclosure. Each indicator also contains sub-indicators and metrics against which companies are assessed. The Net Zero Company Benchmark framework also establishes sector strategies which identify priority actions that should feature in corporate transition plans (in particular as per Indicator 5 of the Climate Action 100 Net Zero Company Benchmark: Decarbonisation strategy) to support investor engagement.
Net Zero Standard for Oil and Gas Institutional Investors Group on Climate Change (IIGC)	The standard was developed in conjunction with the Transition Pathway Initiative (TPI) by the Institutional Investor Group on Climate Change, a European membership body with more than 360 members comprising pension funds and asset managers representing over €49 trillion in assets under management.	The Standard has developed actions and recommendations to achieve a transition to net zero emissions for the Oil and Gas sector in alignment with the 10 disclosure indicators established by the Climate Action 100 Net Zero Company Benchmark.	Recommendations for action include setting a net zero ambition covering energy related activities, short, medium and long-term targets to reduce emissions aligned to the goal of limiting global warming to 1.5C, disclosure of actions intended to reach net zero and contribution of each action to its medium and long-term targets, individual contributions of actions to “net off” gross emissions, the contribution of green energy sales towards medium and long-term targets, whether their investment strategy is net zero aligned, forward-looking CAPEX budgets, for upstream and exploration operations and investment in CCUS or other CDR measures.

3.3.3 Rising significance of broader ESG factors

Notwithstanding earlier observations as to the importance of the environmental factor within ESG rating schemes, recent analysis suggests that both investors and companies are reconsidering the ‘social’ or ‘S’ factor within their ESG assessments and disclosures. The principal driver for this shift has undoubtedly been the COVID-19 pandemic and the emphasis it has placed upon addressing a range of issues including human health, well-being, and inequality.

The efforts of industry and government to support a post-COVID recovery are driving a greater examination of ESG-related issues more generally, but a new focus upon addressing a wide variety of social factors is a critical element of several key programmes. Governments around the world have introduced post-COVID initiatives and support packages aimed at bolstering efforts around sustainability, many of which also seek to address the significant social factors exposed by the pandemic. Investors and financiers have similarly indicated that they too will be increasingly considering companies’ ‘S’ factor performance, against issues as diverse as board representation, working conditions, economic, gender and racial equality (BlackRock, 2020; KPMG, 2021).

A renewed focus upon social factors, has been viewed by some parties as an opportunity for an era-defining shift in approach and one that may lead to companies transitioning from a reactive to a proactive approach to social issues (Blood, 2021; Neilan et al, 2020). The results of a 2021 survey of 150 leading financial services CEOs revealed that 96% of respondents intended to shift their focus to the social component of ESG, a significant increase from the 66% of respondents in 2020 (KPMG, 2021). Several commentators have also foreshadowed greater scrutiny of companies’ performance across the social pillar, which will ultimately be reflected in the inclusion of social factors to a larger extent, in the emerging mandatory reporting and disclosure frameworks (EY, 2020; Grantham Institute et al., 2021).

All three pillars of the ESG acronym are mutually dependent and this relationship is particularly significant in the case of climate change and mitigation efforts. Commentators have highlighted the need therefore, to ensure that activities aimed at addressing climate change and achieving net-zero do not inadvertently lead to negative impacts upon an organisation’s social performance (PRI, 2021; GRESB, 2020). Governments have also been cognisant of this relationship, with socioeconomic and climate considerations carefully balanced in several of the post-COVID recovery

packages announced by governments around the world. President Biden’s executive order on tackling climate change, proposes a government-wide approach to the issue, and one that links action on climate with the creation of well-paying union jobs and the delivery of environmental justice in the United States (White House, 2021b).

For organisations developing and operating projects, or those seeking to invest or finance them, it will also be important to consider the reporting of any potential ‘S’ pillar benefits of CCS operations, notably the wider social implications of these activities. In the case of a CCS project, proponents may seek to highlight the potential socioeconomic benefits of the project’s development. Examples of the particular issues to identify may include a project’s ability to create and sustain new jobs throughout its operational lifecycle, as well as its capacity to stimulate economic growth through new industries and innovation spillovers.

3.3.4 Addressing the challenge of “greenwashing”

Concerns continue to be raised regarding the prevalence of ‘greenwashing’ within the ESG space. Rising skepticism as to the veracity of ESG-focused sustainable finance products, has been compounded by the challenge of companies’ self-reporting their ESG-related performance. As a result, some investors are starting to push-back at the concept of voluntary ESG reporting, calling for greater regulation and proposing that companies approach their ESG disclosures in the same manner that they do their financial disclosures (Generation IM, 2021; Bloomberg, 2021).

The increasing proliferation of sustainability commitments, coupled with raised investor and shareholder expectation, means that a company’s performance will undoubtedly be subject to far greater levels of scrutiny in the future. In many jurisdictions, the focus and content of these ESG-related disclosures is likely to be governed to a larger extent, by the introduction of stricter regulations. Companies will need to ensure that their activities align with the expectation of both investors and regulators and provide an accurate portrayal of both their ESG strategies and performance.

As highlighted previously, a company’s approach to climate change is of particular interest to both shareholders and investors. Close scrutiny of an organisation’s climate strategy and risk disclosures, in line with recognized international best-practice standards, has become a major consideration for many of these stakeholders. The topic of net zero has placed further

pressures upon those companies with explicit targets and mitigation strategies, to provide detail of progress in implementing and achieving these ambitions. Some investors have already expressed concern that the “low-quality” of some of these net zero commitments, absent a high bar for quality and safeguards (Generation IM, 2021).

The consequences for organisations employing greenwashing in their reporting and disclosures, particularly regarding their climate performance, are also likely to prove increasingly severe. While at present, disclosure and reporting commitments remain largely voluntary, the risks associated with this approach are principally reputational. The introduction of new disclosure regulations, however, as well as greater levels of investor activism, will undoubtedly change this position. The potential for litigation or further sanction, where companies fail to meet commitments to net zero or rely upon mitigation pathways that fail to materialise, may be significant where shareholders and investors believe they have been misinformed (Baker McKenzie, 2021).

In the UK, the release of a new ‘Green Claims Code’ from the Competition and Markets Authority (CMA), suggests that regulators may be increasingly willing to address issues of greenwashing (CMA, 2021). While the new code is aimed at informing companies of their obligations under consumer protection law, when making environmental claims, it serves as a useful indicator of both consumer sentiment and regulatory approach in the future.

In the case of CCS, it will be important to avoid making claims for the technology, including its impact upon mitigation and net zero targets, that are not able to be substantiated through an organisation’s reporting and disclosures. Several representatives of the investment and finance sector, interviewed by the Institute, highlighted the need for both greater transparency and detail, when companies reported the use of the technology in meeting their proposed targets. Interviewees from those organisations with significant CO₂ footprint, however, expressed some reservation in making commitments to mitigation technologies, or aligning their deployment with the achievement of net zero or emission reduction commitments. The latter, it was felt, could result in exposure to shareholder or investor action, as well as potential litigation, in the event deployment was delayed or halted.

3.4 Development and standardization

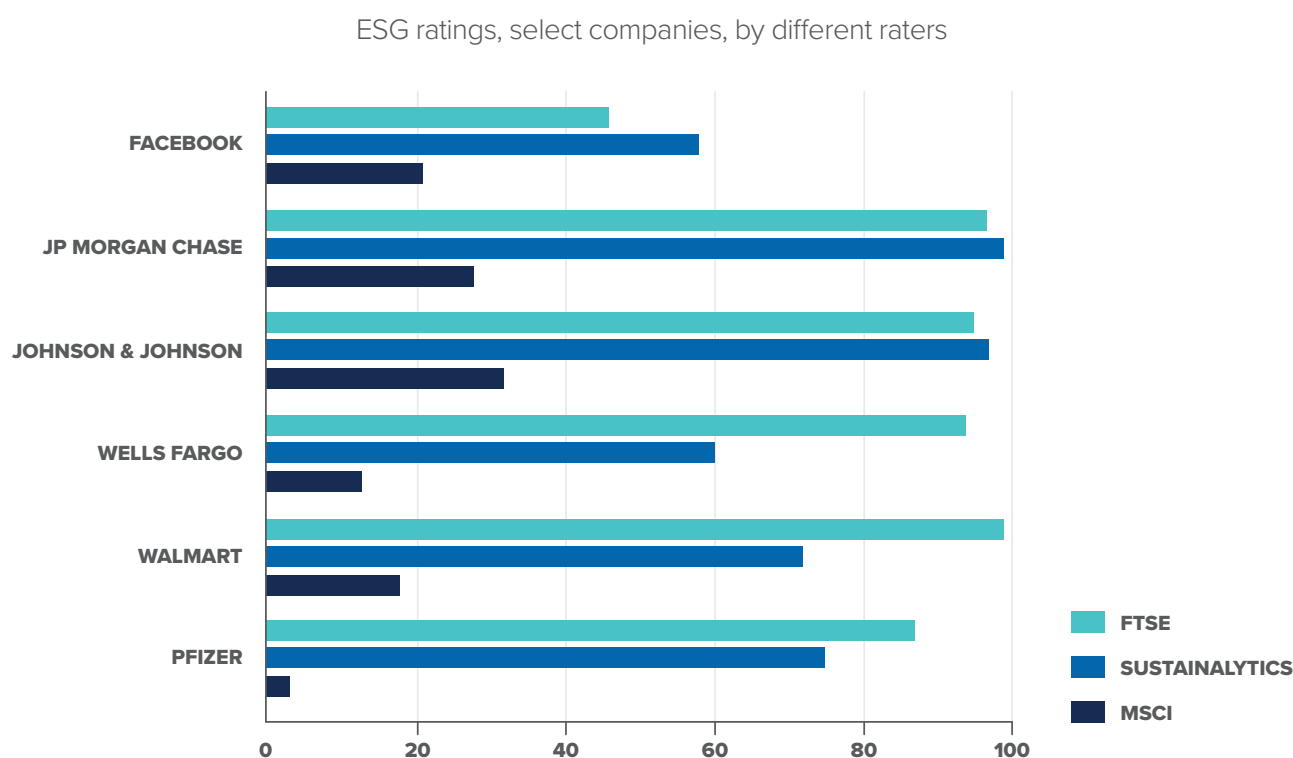
The standardization or closer alignment of ESG ratings and reporting schemes, remains a critical issue for companies, investors and financiers. Presently, a wide variety of voluntary and non-voluntary ESG reporting and ratings models, have been developed by industry organisations, government, research bodies and market data providers. The absence of a singular, standardised model of reporting, particularly in relation to areas such as the environment and climate change, has resulted in a disparate set of information requirements and methodologies that prove challenging to navigate and interpret. Although there are now leading and widely used examples of both voluntary schemes like the TCFD Recommendations and the Carbon Disclosure Project, and proprietary schemes developed by providers such as MSCI and Sustainalytics, their utility may be greatly improved if there was closer alignment on their approach to specific issues or topics.

3.4.1 The reporting challenge

Many commentators have emphasised the sheer breadth of voluntary and commercial ESG reporting models and the difficulty faced by all parties in meeting their requirements and interpreting the results. Even among the voluntary ESG rating schemes, developed by non-governmental organisations, and found in national reporting regulations and stock exchange listing requirements, there is considerable variation as to both the type of information requested and the data that is subsequently generated.

The proprietary nature of many of the commercial ratings schemes and the opacity of their rating methodologies adds a further level of complexity. The resulting ratings prove difficult to compare and, in many instances, remain hard to rely upon exclusively when undertaking assessments of a company’s performance. In the example provided in Figure 2 below, the ratings methodologies of three leading commercial ratings providers, result in some very significant differences in the final ratings performance of several large commercial organisations.

Figure 2: Generation IM assessment of ESG ratings, select companies, by different raters (Generation Investment Management, 2021)



Sources: Adapted from Dimson et al, 2020

As highlighted previously, companies will ordinarily find themselves voluntarily and involuntarily covered by wide-range rating and reporting models. Mandatory reporting obligations, the adoption of voluntary international reporting standards, as well as shareholder or investor pressure to utilise or adopt a specific framework, will place a significant demand upon a company’s time and resources. The Institute’s previous analysis of the ESG reporting landscape confirmed this view, with several organisations expressing concern as to the transparency of some assessment frameworks, their ability to influence or improve their performance and the ultimate value of the ratings that are generated (Global CCS Institute, 2020). Similar views were shared by the companies interviewed in the development of this report, with many emphasising the need to adopt a standardised, transparent approach, that more accurately reflected an organisation’s commitments and activities.

From an investor or shareholder perspective, the lack of non-standardised information continues to prove a frustration. Recent surveys and interviews conducted by the Institute and others, suggest that far greater and more detailed disclosure is required by financiers and investors, particularly in relation to a company’s approach

to climate-related risks (EY, 2020; BlackRock, 2020). Several interviewees highlighted the considerable disparity between the standard of ESG-related information that is disclosed under current reporting frameworks, and the quality of data or information provided under existing financial reporting standards. A recent OECD study emphasised these challenges, noting that in many instances ‘E’ scoring would “not be suitable for investors seeking to better align their portfolios with low carbon economies” (OECD, 2020).

Notwithstanding financiers’ recognition of the benefits of a shift towards more widespread use of voluntary standards, such as those provided in the TCFD’s recommendations, interviewees also noted that greater uptake and further improvements will be necessary to improve the quality and relevance of nonfinancial disclosures. It is hoped that the recent drive towards the standardization of models and schemes, currently underway in several fora, will lead to greater consistency and utility in the information generated. Interviewees also emphasised the efforts of national regulators to introduce mandatory forms of non-financial disclosures, notably in-line with benchmark reporting frameworks, which some also considered to be an important step towards standardisation.

3.4.2 Harmonisation efforts

Recognition of the need to improve the quality and utility of disclosures, particularly in the climate space, has resulted in the concerted action from both the public and private sectors in recent years. The 2020 report of the Group of Thirty, which included a number of recommendations aimed at accelerating the transition to a net zero economy, concluded that although greater standardization would be strongly influenced by the consumers of disclosure information, its realisation would ultimately be driven by international standard-setters (G30, 2020). The sustainability-related reporting work of the International Financial Reporting Standards (IFRS) Foundation and the International Organization of Securities Commissions (IOSCO) are demonstrative of this proposed approach.

The IFRS Foundation is a not-for-profit organisation that was set-up with the aim of developing a singular set of accounting disclosure standards. The organisation's International Accounting Standards Board (IASB) is responsible for developing and publishing the IFRS accounting standards. In 2020, the IFRS Foundation published a consultation document that explored the need for global sustainability-related disclosure standards and considered the role that the organisation may play in developing and administering such standards. A response to the consultation was published in April 2021 and included a draft recommendation to enable the creation of an International Sustainability Standards Board (ISSB), which would develop global sustainability standards (IFRS, 2021a).

At COP 26, the IFRS Foundation formally announced the creation of the ISSB. The new Board will develop the IFRS Sustainability Disclosure Standards that will aim to provide a "comprehensive global baseline" for sustainability disclosures. The ISSB anticipates that the new standards will be developed in a manner that will enable them to be mandated and potentially "combined with jurisdiction-specific requirements or requirements aimed at meeting the information needs of broader stakeholder groups beyond investors" (ISSB, 2021). The creation of the ISSB and the proposed development of baseline sustainability reporting standards, has met with a positive response from governments around the world. The UK government made a formal statement welcoming the establishment and work of the ISSB, within the auspices of COP 26, which was signed by the Finance Ministers and Central Bank Governors from 40 jurisdictions (HM Treasury, 2021).

The April 2021 consultation response identified climate-related reporting as a critical area for future activity and the IFRS Trustees recommended that the new Board should prioritise initial efforts in this area. Furthermore, it was recommended that any new standards should build upon existing investor-focused reporting initiatives. In accordance with this recommendation and in light of increasing demand from the investment community, the ISSB is currently developing a climate disclosure standard.

ANY NEW STANDARDS SHOULD BUILD UPON EXISTING INVESTOR-FOCUSED REPORTING INITIATIVES. IN ACCORDANCE WITH THIS RECOMMENDATION AND IN LIGHT OF INCREASING DEMAND FROM THE INVESTMENT COMMUNITY, THE ISSB IS CURRENTLY DEVELOPING A CLIMATE DISCLOSURE STANDARD.



The ISSB notes that, in developing this standard, it will draw upon the recommendations of the Technical Readiness Working Group (TRWG). The TRWG, which comprises members of the Climate Disclosure Standards Board (CDSB), the IASB, the Task Force for Climate-related Disclosures (TCFD), the Value Reporting Foundation (VRF) and the World Economic Forum (WEF), was developed to support the ISSB and draw upon the work of existing reporting initiatives. In November 2021, the TRWG released prototypes for Climate-related Disclosures (Climate Prototype) and General Requirements for Disclosure of Sustainability-related Financial Information (General Requirements Prototype) for consideration by the ISSB (IFRS, 2021b).

In March 2022 the ISSB launched a formal consultation on two proposed standards, which build upon the earlier prototypes prepared by the TRWG. The two documents *Exposure Draft IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information* and *Exposure Draft IFRS S2 Climate-related Disclosures* will be the subject of a 120-day consultation, with the ISSB aiming to issue the final standards by the end of 2022. In addition to the release of these exposure drafts, the ISSB reiterated its commitment to ensuring that these new standards continue to build upon existing investor-focused reporting initiatives.

The work of the World Economic Forum (WEF) and the IOSCO has also proven significant in the development of sustainability or non-financial disclosure standards. In 2020 the WEF released a set of ‘Stakeholder Capitalism Metrics’ that are aimed at supporting companies’ non-financial reporting against various ESG indicators. Led by the International Business Council, the initiative has drawn from existing standards, to develop 21 core and 34 expanded metrics and disclosures that are aligned with four key ESG pillars: Principles of Governance, Planet, People and Prosperity (WEF, 2020). The work of the WEF, including these stakeholder metrics, has been considered by the ISSB in the preparation of the forthcoming disclosure standard.

The IOSCO, the global association of national securities regulatory commissions, also strongly supports the work of the ISSB. The organisation develops, implements, and promotes internationally recognized and consistent standards of regulation for the securities sector. In a keynote speech at COP 26 in November 2021, the Chair of the IOSCO Board acknowledged the significance of ESG frameworks and the need to address the current inconsistencies within sustainability reporting. Importantly, the speech acknowledged the role of the ISSB in the development of future standards and, subject to detailed technical assessment, the willingness of IOSCO to endorse the new standards for use by over 130 market regulators (IOSCO, 2021).

4.0 ANALYSIS OF CCS WITHIN ESG REPORTING

As discussed in the earlier sections of this report, both investors and markets are increasingly seeking access to high quality information on environmental, social and governance performance, risk and opportunities. In line with these expectations, the number of ESG-focused voluntary reporting standards or ratings systems has risen sharply, many of which introduce greater rigour to their assessments.

The Institute has reviewed fifteen of the most prominent voluntary reporting standards, with a focus on climate-related risks, to investigate the extent to which CCS is included within their scope. Twenty broad reporting requirements were distilled from these fifteen standards, to address the full range of issues where CCS may be relevant. These broad reporting requirements were then grouped under six general themes:

- **Climate Related Risk Management Processes, Governance and Strategy**
- **Climate Related Risks Considered in Financial Management or Investment Decisions**
- **Greenhouse Gas Emissions Estimation and Targets**
- **Scope 1 and Scope 2 Emission Reduction Reporting**
- **Scope 3 Emission Reduction Reporting**
- **Outreach and Collaboration**

The relevance of CCS to each reporting requirement has been briefly described for each standard, as shown in the tables below. It should be noted that, in the interest of brevity, only the specific reporting requirements of each standard and not supplementary guidance where available, are captured within this analysis.

None of the standards reviewed exclude reporting CCS across the full range of broad reporting requirements and themes. If CCS contributes to a reporter's climate risk management, investment decisions, greenhouse

gas emissions or targets, initiatives to reduce scope 1, 2 or 3 emissions or outreach and collaboration, then it may be reported, subject to character-count limits in some cases.

In several instances, standards do not have a specific focus on a particular sector or industry and are therefore effectively technology agnostic. This is appropriate as these standards have been designed for application to any business. For example, one of the key features of the recommendations of the Taskforce for Climate Related Financial Disclosures is that they are "Adoptable by all organisations" (TCFD, 2017).

Even where CCS-reporting requirements are absent, standards may refer to specific taxonomies or greenhouse gas accounting standards that recognise or make provision for CCS. These include the Greenhouse Gas Protocol published by the World Resources Institute, which is referenced by the Sustainability Accounting Standards Board and the European Union Taxonomy for Sustainable Activities that is referenced by the UN Principles for Responsible Investment. Instances where CCS may be included in these circumstances, are identified in green text in the tables below.

Standards or questionnaires that have been developed for specific industries where CCS has application, such as the steel, cement, coal, and oil and gas industries, also include specific CCS reporting requirements. These include the:

- Carbon Disclosure Project questionnaires for the oil and gas, cement, coal and steel sectors,
- the IPIECA Oil and Gas Industry Guidance on Voluntary Sustainability Reporting,
- the Climate Action 100 Steel Sector Strategy, and
- the IIGC Net Zero Standard for Oil and Gas.

CCS-specific reporting requirements, under these particular schemes, generally include a description of CCS deployment plans, investments and capital expenditure on CCS, as well as the anticipated contribution of CCS to emissions reductions. Examples of these requirements are also highlighted in green text in the tables below.

The principal conclusion to be drawn from the Institute's analysis, of a sample of the most prominent voluntary reporting standards, is that there are no barriers to the reporting of CCS as a component of an organisation's climate risk mitigation strategy or activities.

Table 3: Analysis of Climate Related Risk Management Processes, Governance and Strategy

Climate Related Risk Management Processes, Governance & Strategy²

VOLUNTARY REPORTING STANDARD	CLIMATE RISKS / OPPORTUNITIES ARE IDENTIFIED	DESCRIBE PROCESSES OR GOVERNANCE FOR IDENTIFICATION, ASSESSMENT & MANAGEMENT OF CLIMATE RISKS/ OPPORTUNITIES	INTEGRATION OF CLIMATE RISKS/ OPPORTUNITIES INTO RISK MANAGEMENT OR STRATEGY	PURPOSE AND OBJECTIVE	SCOPE AND COVERAGE
Taskforce on Climate-Related Financial Disclosures	CCS may be reported as an opportunity or a control to mitigate climate risks.	CCS may be reported as an opportunity or a control to mitigate climate risks.	CCS may be reported as an opportunity or a control to mitigate climate risks.	Contribution of CCS may be included in metrics such as emissions reduction, capital deployed to low carbon activities, revenues from low carbon activities.	
Carbon Disclosure Project	CCS may be reported as an opportunity or a control to mitigate climate risks. Oil & Gas, Cement, Coal, and Steel questionnaires required disclosure of any CCUS operations.	CCS may be reported as an opportunity or a control to mitigate climate risks.	CCS may be reported as an opportunity or a control to mitigate climate risks.		
Asset Owners Disclosure Project	CCS may be reported as an opportunity or a control to mitigate climate risks.		CCS may be reported where relevant.	Contribution of CCS may be included in metrics such as emissions reduction, capital deployed to low carbon activities, revenues from low carbon activities.	
IPIECA Oil & Gas Industry Guidance on Voluntary Sustainability Reporting			Examples of planned activities specifically identify CCS.		
Climate Disclosure Standards Board	CCS may be reported where relevant.	CCS may be reported where relevant.	CCS may be reported where relevant.		
United Nations Principles for Responsible Investment	CCS may be reported where relevant.	CCS may be reported where relevant.		CCS may be reported where relevant.	
Global Reporting Initiative	CCS may be reported where relevant.				

² Blank cells in the table indicate that no specific reporting requirement was identified in the Voluntary Reporting Standard. Green text indicates an explicit requirement in the Voluntary Reporting Standard to report CCS-related activities

VOLUNTARY REPORTING STANDARD	CLIMATE RISKS / OPPORTUNITIES ARE IDENTIFIED	DESCRIBE PROCESSES OR GOVERNANCE FOR IDENTIFICATION, ASSESSMENT & MANAGEMENT OF CLIMATE RISKS/ OPPORTUNITIES	INTEGRATION OF CLIMATE RISKS/ OPPORTUNITIES INTO RISK MANAGEMENT OR STRATEGY	PURPOSE AND OBJECTIVE	SCOPE AND COVERAGE
Sustainability Accounting Standards Board			CCS may be reported where relevant.		Total emissions calculation allows for CCS.
MSCI Ratings	CCS may be reported where relevant but is not explicitly included in scoring methodology.				
Sustainalytics	CCS may be reported where relevant but is not explicitly included in scoring methodology.				
Corporate Knights					
Climate Action 100 Net Zero Company Benchmark			Contribution of CCS to decarbonisation strategy may be reported where relevant.		
Climate Action 100 - Steel Sector Strategy					
IIGC Net Zero Standard for Oil & Gas					
UN Convened Net Zero Asset Owner Alliance - 2025 Target Setting Protocol					

Table 4: Analysis of Climate Related Risks Considered in Financial Management or Investment Decisions

*Climate Related Risks Considered in Financial Management or Investment Decisions*³

VOLUNTARY REPORTING STANDARD	CLIMATE-RELATED RISKS OR OPPORTUNITIES IMPACT ON FINANCIAL PLANNING	DISCLOSE EXTENT OF ALIGNMENT OF INVESTMENT OR ASSETS WITH “WELL BELOW 2° CELSIUS SCENARIO”	DESCRIPTION OF METHODS TO DRIVE EMISSION REDUCTION INVESTMENTS	DESCRIPTION OF INVESTMENT IN R&D INTO LOW CARBON PRODUCTS AND SERVICES	USE OF INTERNAL CARBON PRICE - INCLUDING OBJECTIVES OF USE AND SCOPE OF EMISSIONS COVERED BY THEM	DESCRIPTION OF CREATION OR PURCHASE OF CARBON CREDITS	DESCRIPTION OF TARGETS OR ASSET ALLOCATION POLICY ON LOW CARBON ASSETS
Taskforce on Climate -Related Financial Disclosures	CCS may be reported where relevant.	CCS may be reported where relevant.					
Carbon Disclosure Project	Expenditure or revenue related to CCS may be reported.		CCS may be reported where relevant, e.g., if there is a dedicated budget for CCS.	Questionnaires for Oil & Gas, Cement, Coal, and Steel all require disclosure of investment in R&D for CCUS.	CCS can be reported where relevant - e.g., if internal carbon price is used in CCS project investment decisions.	Can report CCS where the credit issuing authority recognises abatement from CCS - would require a method.	
Asset Owners Disclosure Project			CCS may be reported where relevant.				CCS may be reported where relevant.

³ Blank cells in the table indicate that no specific reporting requirement was identified in the Voluntary Reporting Standard. Green text indicates an explicit requirement in the Voluntary Reporting Standard to report CCS-related activities.

VOLUNTARY REPORTING STANDARD	CLIMATE-RELATED RISKS OR OPPORTUNITIES IMPACT ON FINANCIAL PLANNING	DISCLOSE EXTENT OF ALIGNMENT OF INVESTMENT OR ASSETS WITH “WELL BELOW 2°C/CELSIUS SCENARIO”	DESCRIPTION OF METHODS TO DRIVE EMISSION REDUCTION INVESTMENTS	DESCRIPTION OF INVESTMENT IN R&D INTO LOW CARBON PRODUCTS AND SERVICES	USE OF INTERNAL CARBON PRICE - INCLUDING OBJECTIVES OF USE AND SCOPE OF EMISSIONS COVERED BY THEM	DESCRIPTION OF CREATION OR PURCHASE OF CARBON CREDITS	DESCRIPTION OF TARGETS OR ASSET ALLOCATION POLICY ON LOW CARBON ASSETS
IPIECA Oil & Gas Industry Guidance on Voluntary Sustainability Reporting							
Climate Disclosure Standards Board				CCS may be reported where relevant.		CCS may be reported where relevant.	
United Nations Principles for Responsible Investment	CCS may be reported where relevant.			CCS may be reported where relevant.			CCS may be reported where relevant. Percentage of assets aligned with EU Taxonomy or similar taxonomies is a specific suggested metric.
Global Reporting Initiative				CCS may be reported where relevant.			Investment in renewable energy, technology to remove CO ₂ from the atmosphere nature-based removal.
Sustainability Accounting Standards Board			Contribution of CCS to emission reductions investments may be reported where relevant.				
MSCI Ratings	CCS may be reported where relevant but is not explicitly included in scoring methodology.						
Sustainalytics							
Corporate Knights							
Climate Action 100 Net Zero Company Benchmark			CCS may be reported where relevant to alignment of capital expenditure with GHG targets.				
Climate Action 100 - Steel Sector Strategy			Describing plans to Invest in CCS/CCUS to align capital expenditure with Net-Zero strategy is recommended.				
IIGC Net Zero Standard for Oil & Gas			Conduct and publish study setting out locations, annual amount of CO ₂ expected to be captured, storage and transport mechanisms, carbon price that would make the investment profitable, costs, timings and returns on investment.	Disclose total capitalised spending (i.e., capex plus any capitalised R&D) on CCUS, BECCS and DAC in the most recent financial year and a forward-looking budget (minimum three years ahead).			
UN Convened Net Zero Asset Owner Alliance - 2025 Target Setting Protocol							

Table 5: Analysis of Greenhouse Gas Emission Estimation and Targets

Greenhouse Gas Emission Estimation and Targets ⁴

VOLUNTARY REPORTING STANDARD	SCOPE 1, 2 & 3 GREENHOUSE GAS EMISSIONS & CLIMATE-RELATED TARGETS	CALCULATION OF AGGREGATE PORTFOLIO EMISSIONS INTENSITY	DESCRIPTION IF/ HOW EMISSIONS FROM SALE OF PRODUCTS/SERVICES ARE ALLOCATED TO CUSTOMERS	REPORT EMISSIONS POTENTIAL OF PROVEN AND PROBABLE RESERVES
Taskforce on Climate-Related Financial Disclosures	Contribution of CCS may be included in targets.			
Carbon Disclosure Project	Contribution of CCS may be included in targets.		Calculation of emissions allocated could account for CCS. Ideally, the compliance C accounting regime applicable would also recognise abatement from CCS and include a method for calculating that abatement.	
Asset Owners Disclosure Project	CCS may be reported where relevant.	Calculation of emissions could account for CCS. Ideally, the compliance C accounting regime applicable would also recognise abatement from CCS and include a method for calculating that abatement.		
IPIECA Oil & Gas Industry Guidance on Voluntary Sustainability Reporting	Examples of planned activities specifically identify CCS. Calculation of emissions account for CCS.			
Climate Disclosure Standards Board	CCS may be reported where relevant.			
United Nations Principles for Responsible Investment	Contribution of CCS may be included in targets.			
Global Reporting Initiative	Reporting of emissions may account for CCS.			CCS may reduce emissions potential, but there is no specific provision to require an estimate of that potential reduction.
Sustainability Accounting Standards Board	Calculation of emissions according to <i>The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (GHG Protocol), Revised Edition, March 2004</i> , published by the World Resources Institute. This standard takes account of reductions through CCS. Contribution of CCS to targets may be reported where relevant.			
MSCI Ratings				
Sustainalytics				
Corporate Knights				

⁴ Blank cells in the table indicate that no specific reporting requirement was identified in the Voluntary Reporting Standard. Green text indicates an explicit requirement in the Voluntary Reporting Standard to report CCS-related activities.

VOLUNTARY REPORTING STANDARD	SCOPE 1, 2 & 3 GREENHOUSE GAS EMISSIONS & CLIMATE-RELATED TARGETS	CALCULATION OF AGGREGATE PORTFOLIO EMISSIONS INTENSITY	DESCRIPTION IF/ HOW EMISSIONS FROM SALE OF PRODUCTS/SERVICES ARE ALLOCATED TO CUSTOMERS	REPORT EMISSIONS POTENTIAL OF PROVEN AND PROBABLE RESERVES
Climate Action 100 Net Zero Company Benchmark	Contribution of CCS to achieving Net-zero may be included in targets.			
Climate Action 100 - Steel Sector Strategy				
IIGC Net Zero Standard for Oil & Gas	Contribution of CCUS, BECCS & DACS to operational emissions targets required to be reported.			
UN Convened Net Zero Asset Owner Alliance - 2025 Target Setting Protocol	Sub-portfolio targets, Sector targets, Engagement targets, financing transition targets are reported. CCS may contribute to those targets, but CDR should not be "over-emphasised".			

Table 6: Analysis of Scope 1, 2 Emission Reduction Reporting

Scope 1, 2 Emission Reduction Reporting ⁵

VOLUNTARY REPORTING STANDARD	DESCRIBE EMISSION REDUCTION INITIATIVES IN PLANNING OR OPERATION
Taskforce on Climate -Related Financial Disclosures	
Carbon Disclosure Project	Oil & Gas Sector Questionnaire requires disclosure of the mass of CO ₂ sequestered or used for EOR/EGR or ECBM Emission reduction Initiatives in Oil & Gas, Cement, Coal, and Steel Questionnaires specifically include CCS: <ul style="list-style-type: none"> • Fugitive emissions reductions initiatives – includes CCUS • Low-carbon energy generation, includes fossil fuel plant with CCS • Non-energy industrial process emissions reductions, includes CCS.
Asset Owners Disclosure Project	
IPIECA Oil & Gas Industry Guidance on Voluntary Sustainability Reporting	CCS and EOR specifically required to be reported amongst suite of technologies applied to reduce emissions or in plans.
Climate Disclosure Standards Board	
United Nations Principles for Responsible Investment	
Global Reporting Initiative	Describe actions to manage flaring and venting - CCS may be reported where relevant. Net mass of CO ₂ captured & removed from atmosphere and stored.
Sustainability Accounting Standards Board	Contribution of CCS to emission reductions may be reported where relevant.
MSCI Ratings	
Sustainalytics	
Corporate Knights	
Climate Action 100 Net Zero Company Benchmark	
Climate Action 100 - Steel Sector Strategy	The development of plans to deploy CCS/CCUS & DRI with low carbon hydrogen are specifically recommended.
IIGC Net Zero Standard for Oil & Gas	
UN Convened Net Zero Asset Owner Alliance - 2025 Target Setting Protocol	

⁵ Blank cells in the table indicate that no specific reporting requirement was identified in the Voluntary Reporting Standard. Green text indicates an explicit requirement in the Voluntary Reporting Standard to report CCS-related activities.

Table 7: Analysis of Scope 3 Emission Reduction Reporting

*Scope 3 Emission Reduction Reporting*⁶

VOLUNTARY REPORTING STANDARD	DESCRIPTION OF EXISTING LOW-CARBON GOODS AND SERVICES AND HOW THEY REDUCE SCOPE 3 EMISSIONS INCLUDING DISCLOSURE OF TAXONOMY OR METHOD USED TO CLASSIFY THEM AS LOW-CARBON
Taskforce on Climate -Related Financial Disclosures	
Carbon Disclosure Project	Methodologies include: National Greenhouse and Energy Reporting Scheme (NGERS), EU Emissions Trading Scheme (EU ETS), IPCC Guidelines for National Greenhouse Gas Inventories 2006. Taxonomies include: <ul style="list-style-type: none"> • Low-Carbon Investment (LCI) Registry Taxonomy • Climate Bonds Taxonomy • The EU Taxonomy for environmentally sustainable economic activities.
Asset Owners Disclosure Project	
IPIECA Oil & Gas Industry Guidance on Voluntary Sustainability Reporting	
Climate Disclosure Standards Board	
United Nations Principles for Responsible Investment	
Global Reporting Initiative	
Sustainability Accounting Standards Board	
MSCI Ratings	
Sustainalytics	
Corporate Knights	Under the Clean Revenue KPI, the scheme requires disclosure of <ul style="list-style-type: none"> • Percentage of your total revenue derived from products and services that are categorized as “clean” according to the Corporate Knights open-source clean revenue taxonomy. • The Clean Revenue Taxonomy recognises and includes CCS technologies.
Climate Action 100 Net Zero Company Benchmark	Contribution of CCS to company “green revenues” may be reported where relevant.
Climate Action 100 - Steel Sector Strategy	
IIGC Net Zero Standard for Oil & Gas	
UN Convened Net Zero Asset Owner Alliance - 2025 Target Setting Protocol	

⁶ Blank cells in the table indicate that no specific reporting requirement was identified in the Voluntary Reporting Standard. Green text indicates an explicit requirement in the Voluntary Reporting Standard to report CCS-related activities.

Table 8: Analysis of Outreach and Collaboration

*Outreach and Collaboration*⁷

VOLUNTARY REPORTING STANDARD	DESCRIPTION OF PUBLIC POLICY ENGAGEMENT	DESCRIPTION OF CLIMATE-RELATED COLLABORATION WITH OTHER CDP MEMBERS
Taskforce on Climate -Related Financial Disclosures		
Carbon Disclosure Project	CCS may be reported where relevant.	Collaboration on CCS projects may be reported.
Asset Owners Disclosure Project		
IPIECA Oil & Gas Industry Guidance on Voluntary Sustainability Reporting		
Climate Disclosure Standards Board	CCS may be reported where relevant.	
United Nations Principles for Responsible Investment		
Global Reporting Initiative		
Sustainability Accounting Standards Board		
MSCI Ratings		
Sustainalytics		
Corporate Knights		
Climate Action 100 Net Zero Company Benchmark		
Climate Action 100 - Steel Sector Strategy		
IIGC Net Zero Standard for Oil & Gas		
UN Convened Net Zero Asset Owner Alliance - 2025 Target Setting Protocol		

⁷ Blank cells in the table indicate that no specific reporting requirement was identified in the Voluntary Reporting Standard. Green text indicates an explicit requirement in the Voluntary Reporting Standard to report CCS-related activities.

5.0 DEVELOPING A CCS-SPECIFIC REPORTING METHODOLOGY

The following sections reflect upon the current status quo and consider how organisations' reporting of the status of CCS may be improved within ESG schemes.

5.1 Context for a reporting framework

The Institute's research and formal interviews reveal that for many investors, access to high-quality information, that allows them to assess the risks and returns associated with investment choices, remains a primary concern. ESG reporting provides an important means of supporting this and as such, it seeks to provide a structured, reliable and efficient framework for describing non-financial value drivers (or destroyers). Information disclosed through these various frameworks enables investors to make their own assessment as to whether potential investments are aligned with their values and whether these non-financial value drivers may impact future financial returns.

Although it has historically focused to a greater extent upon a more narrative style of reporting, when compared to financial reporting and its stronger quantitative basis, ESG-related reporting is in fact serving the same ultimate objective – providing investors with information to inform their investment decisions. As investors' expectations around ESG performance continue to rise, so too has the importance of reporting frameworks more broadly. Investors are now looking for ESG reporting that offers far-greater levels of consistency and comparability, and there is an increasing demand for standardisation and verification. In addition to more granular narratives around plans and strategies to mitigate climate risk, or realise new business opportunities, investors are now seeking greater quantitative reporting of ESG risks and performance.

Climate change presents a significant, material risk for firms that have emissions intense value chains, and, in many instances, investors are now demanding a more detailed understanding of how that risk is being, or will be, mitigated. In this context, the general reporting of the potential role of carbon capture and storage in mitigating a firm's own emissions, or the emissions of its customers, and thereby reducing climate-related risks, is no longer sufficient. The Institute's research and interviews with financiers and investors concluded that, while there are positive examples of CCS-specific reporting, a far-greater level of CCS-specific reporting will be required from project proponents to satisfy their requirements. Current reporting frameworks afford a baseline; however, more fulsome qualitative information and data will be required in many instances.

For many companies with significant emissions exposure, the drive towards greater reporting of climate-related risks and net zero ambitions, has led to an increased emphasis upon reporting and disclosure. The Institute's interviews revealed that companies continue to commit significant effort and resources to engaging with ratings agencies and producing climate reporting that is in-line with the latest standards and investor requirements. Notwithstanding this, some companies highlighted the lack of a clear pathway for detailed reporting of CCS-specific activity within preferred models and suggested that information on CCS simply wasn't sought under some commercial ratings schemes.

5.2 Approach to developing the methodology

The institute's analysis of the fifteen most prominent voluntary reporting standards, revealed that although there were no significant barriers to the reporting



of CCS-specific activities, there were few examples of comprehensive guidance that would support an operator wishing to do so. An increased push towards the reporting of net-zero targets and organisations' progress towards them, the more widespread deployment of low carbon technologies and rising investor interest, will all require a greater focus upon supporting CCS-specific disclosure.

Interviewees and wider research suggest that in addition to more general reporting related to climate risk, a fit-for-purpose methodology for reporting CCS within an ESG reporting framework should support an investor's understanding of several, more specific factors. The following, non-exhaustive list, provides examples of some of the issues that have been highlighted:

- How to quantify the expected reductions in a reporting firm's emissions that CCS will deliver each year over a forward projection period.
- The materiality of those emission reductions when compared to the firm's total CO₂ emissions.
- How CCS contributes to an organisation's broader strategy to mitigate climate risk and form a view as to the strength and materiality of that strategy.
- The governance of the strategy and the level within the organisation at which accountability for its development and implementation resides.
- Where CCS will contribute to emission reductions in the firm's value chain.
- The firm's work programs related to CCS, including quantitative reporting of resourcing and investments.

The Institute's CCS-specific methodology, set out in the following section, draws upon the existing leading reporting frameworks, and aligns with the six general

themes that were identified within them:

- Climate Related Risk Management Processes, Governance and Strategy
- Climate Related Risks Considered in Financial Management or Investment Decisions
- Greenhouse Gas Emissions Estimation and Targets
- Scope 1 and Scope 2 Emission Reduction Reporting
- Scope 3 Emission Reduction Reporting
- Outreach and Collaboration

The methodology adopts a non-prescriptive approach and seeks to highlight how critical CCS-specific factors could be successfully incorporated within current reporting pathways. The Institute has adopted this approach, to reflect the views of those interviewed and contemporary discussions taking place within the ESG reporting space. In the case of the former, both industry and finance sector representatives highlighted the significant number of reporting schemes and emphasised their desire to see greater consolidation and standardisation of schemes. Similarly, recent discussions within the auspices of the WEF, the IOSCO and the ISSB, as discussed earlier in this report, suggest that in the move towards closer standardisation, the use of existing pathways would be a preferable approach.

The following methodology allows all relevant parties - operators, end-users of the reported information and those designing and developing reporting schemes – to gain a clearer, holistic understanding of the breadth of CCS-specific information that could be reported in-line with existing frameworks. Enhancement of current schemes, to recognise the relevance and significance of this information, would benefit all parties in their consideration of CCS specifically.

5.3 CCS-Specific methodology

Climate related risk management processes, governance and strategy

Issues addressed under this reporting theme

- Identification of climate risks and/or opportunities
- Processes or governance for assessing and managing climate risks and/or opportunities
- Integration of risks and/or opportunities into management or strategy
- Metrics used in assessing climate risks and/or opportunities
- Proportion of emissions covered by scheme(s) aimed at reducing emissions

Table 9: CCS-Specific methodology - Climate related risk management processes, governance and strategy

SCOPE	QUALITY
Strategic view as to the role of CCS in the management of climate risks and/or the opportunities or benefits afforded through CCS investment and deployment.	<ul style="list-style-type: none"> • Development of a detailed narrative that clearly describes the relevance of CCS in supporting the organisation's climate mitigation objectives, management of climate-related risks and future business strategy. • Statements should identify proposed applications of the technology, by reference to the organisation's sector, core activities and operations. • Provide detail of the CCS-specific objectives of forward-looking business plans, or any other commercial opportunities that may include CCS-specific applications. • Organisations should identify the time horizons for CCS-specific activities, with clarity as to both medium and long-term ambitions for the technology's deployment.
Governance arrangements that support the strategic ambition for CCS.	<ul style="list-style-type: none"> • Description of the organisation's current internal governance arrangements and approach to the management of climate change risks and opportunities. • Information to be disclosed may include: <ul style="list-style-type: none"> • The Executive and/or Board's views and approach to addressing climate change and the role of CCS. • Any climate change-related incentives or bonus structures that may be available to the Board and/or Executive. • Any CCS-specific KPIs used by the organisation in their management of climate change performance. • Explanation as to how and where CCS will be managed within the auspices of the organisation's existing climate change governance arrangements: <ul style="list-style-type: none"> • To include detail of any changes introduced, or to be introduced, to accommodate CCS-specific interests within the current governance arrangements. • Identification of specific personnel, department(s) or division(s) with responsibility for implementing the strategic ambition for CCS. • Provide examples of programmes or initiatives that will underpin the organisation's approach to CCS.
Metrics to be used in the assessment of CCS-specific benefits and/or risks	<ul style="list-style-type: none"> • Description of the metrics, performance criteria and/or standards to be used by the organisation when assessing performance, in relation to its climate mitigation strategies and/or risks. • Explanation of how CCS-specific performance and risks will be captured within the organisation's existing metrics, or details of any new metrics that have been developed to address these issues. • Examples of CCS-specific metrics to be used may include: <ul style="list-style-type: none"> • Target date for installed capture capacity. • Total volume of CO₂ stored per annum. • Volumes of CO₂ to be delivered under an offtake agreement.

Climate related risks considered in financial management or investment decisions

Issues addressed under this reporting theme

- Impact of climate related risks/opportunities upon financial planning
- Alignment of investments or assets with “well below 2°C scenario”
- Methods to drive emissions reduction investments
- Investment in R&D into low-carbon products and services
- Adoption of an internal carbon price
- Creation and/or purchase of carbon credits
- Targets or asset allocation policy on low carbon assets

Table 10: CCS-Specific methodology - Climate related risks considered in financial management or investment decisions

SCOPE	QUALITY
Role of CCS in addressing financial risks and/or opportunities	<ul style="list-style-type: none"> • Development of a detailed statement describing how CCS-specific investment will: <ul style="list-style-type: none"> • Address the financial challenges of an organisation’s material climate-related risks. • Lead to specific financial opportunities that would not otherwise be afforded to the organisation. • Examples of Information to be provided here, may include the impact of CCS upon: <ul style="list-style-type: none"> • an organisation’s potential for green revenues from the sale of low carbon products and services. • improvements in competitiveness from the provision of these low-carbon products and services. • reducing the organisation’s GHG emissions and exposure to rising carbon prices.
Proportion of R&D investment dedicated to CCS-specific activities	<ul style="list-style-type: none"> • Description of an organisation’s proposed or operational CCS-specific R&D activities, to include: <ul style="list-style-type: none"> • The objectives and scope of the R&D activities, key deliverables and timeline for delivery of the project(s). • Details of any external project partners, for example, other commercial organisations, academic or research institutions. • Impact and relevance of R&D activities to the organisation’s wider commercial interests in CCS. • Clear statement as to the value and/or percentage of an organisation’s low-carbon R&D budget that is dedicated to supporting CCS-specific activities. <ul style="list-style-type: none"> • May be expressed in terms of capitalised expenditure on CCS R&D activities within a specified period. • Indication as to the temporal extent of any CCS-specific R&D support, including the proposed/actual annual spend upon CCS activities.
Consideration of CCS within carbon crediting schemes	<ul style="list-style-type: none"> • Identification of relevant carbon crediting schemes that will support and/ or incentivise existing or planned CCS activities, to include: <ul style="list-style-type: none"> • Overview of the relevant crediting scheme(s) and the application to CCS-specific activities. • Details of the current and/or modelled value of CO₂ offsets under the scheme and the impact upon the organisation’s investment. • Provide detail of the legal and regulatory framework that implements the relevant carbon crediting schemes: <ul style="list-style-type: none"> • To include detail of the organisation’s approach to compliance with this framework, including details of any ongoing programme of third-party verification.
Response to regulatory intervention	<ul style="list-style-type: none"> • Indication of how an organisation intends to manage the financial risks associated with climate change or CCS-specific regulatory intervention, for example: <ul style="list-style-type: none"> • The establishment of a carbon tax, trading, or pricing scheme. • Implementation or further enhancement of CCS-specific regulatory frameworks. • Amendments to international or regional agreements likely to impact the operation of CCS facilities or more widespread deployment of CCS technologies.
Management of current or anticipated climate litigation	<ul style="list-style-type: none"> • Indication of an organisation’s approach to identifying the risks posed by climate litigation to CCS-related investments and project deployment. • In instances where CCS-specific/relevant litigation is ongoing; organisations may provide details as to the approach adopted to managing: <ul style="list-style-type: none"> • The impact of the case upon project operation and investments. • Any negative implications of the litigation that may present as “controversy factors” within ratings schemes. • Indication as to the extent to which CCS may mitigate climate litigation against the organisation.

Greenhouse gas emissions estimation and targets

Issues addressed under this reporting theme

- Scope 1,2 and 3 GHG and climate targets
- Calculation of aggregate portfolio emissions intensity
- If/how emissions are allocated to customer(s) from sale of goods or services
- Emissions potential of proven or probable reserves

Table 11: CCS-Specific methodology - Greenhouse gas emissions estimation and targets

SCOPE	QUALITY
Treatment of CCS in estimates of Scope 1, 2 and 3 GHG emissions	<ul style="list-style-type: none"> • Clearly define the percentage contribution that CCS activities will make towards reducing emissions, when calculating and reporting an organisation's GHG emissions estimate. • Identify the emissions accounting methodology to be used by the organisation when determining the emissions reductions achieved through CCS: <ul style="list-style-type: none"> • May include national emissions accounting frameworks such as the National Greenhouse and Energy Reporting Scheme (NGERs), or international models such as the IPCC Guidelines for National Greenhouse Gas Inventories 2006. • Details of the processes of verification/assurance that are to be used when determining the organisation's CCS-specific emissions reductions.
Contribution of CCS towards GHG emissions reduction targets	<ul style="list-style-type: none"> • Organisations to specify the anticipated contribution CCS will make towards achieving their emissions reduction targets (For Scope 1 and 2, emissions). <ul style="list-style-type: none"> • May include detail of specific assessment metrics to be used in determining this contribution, for example the anticipated volume of CO₂ stored and relevant dates. • Organisations to detail the impact of their CCS activities in delivering GHG emissions reductions to-date (For Scope 1 and 2 emissions).
Role of CCS in reducing Scope 3 emissions	<ul style="list-style-type: none"> • Description of initiatives to develop and implement CCS technologies to reduce CO₂ emissions relating to value chain emissions. • Contribution or expected contribution of CCS towards reducing emissions including consumer use of products and imported electricity and steam. • Contribution of CCS accounted for within emissions from sale of products/services allocated to customers.
Contribution of CCS towards achieving net zero emissions pledges or target	<ul style="list-style-type: none"> • Organisations to disclose their intention to use CCS in achieving their net zero emissions pledges or targets. • An organisation to provide a description of their application of the technology, which may include: <ul style="list-style-type: none"> • Full details of the planned CCS activities. • The percentage of the organisation's net zero target to be achieved through these CCS-specific activities. • The contribution of these activities towards achieving the company's timeframe for net zero emissions targets. • Verification of the percentage contribution of CCS, by an independent third party (e.g., the Science Based Targets Initiative), towards achieving the organisation's net zero pledge or target.

Scope 1 and 2 emissions reduction reporting

Issues addressed under this reporting theme

- Description of emissions reduction initiatives in planning or operation

Table 12: CCS-Specific methodology - Scope 1 and 2 emissions reduction reporting

SCOPE	QUALITY
<p>Current contribution of CCS operations towards reducing Scope 1 and 2 emissions</p>	<ul style="list-style-type: none"> • A clear statement regarding an organisation's use of CCS, to reduce operational emissions, including the technological and storage applications utilised. • Detail of the quantity of CO₂ equivalent, expressed in tonnes, that is reduced as a direct consequence of CCS in the reporting year. • Overview of progress/performance of CCS-specific emissions reduction activities since the start of operations. • An anticipated timeline for all relevant CCS operations, including the start year of any projects. • A statement of the volume of CO₂ captured, exported, stored, or used for CO₂-EOR/utilisation. • Detailed overview of any project, to include (but not limited to) the following details: <ul style="list-style-type: none"> • Location of the capture plant and storage site • Annual amount of CO₂ currently/anticipated to be captured • Cumulative CO₂ injected and stored (tonnes of CO₂) • Costs (pipeline costs, cost per ton of CO₂ over the life of the project) • Existence of commercial agreements to support commerciality of project (e.g., offtake contracts) • Monitoring and verification programme • Statement as to the management of project risks (e.g., long-term liability and insurance) • Recognition of abatement through crediting schemes, voluntary or statutory carbon markets, or carbon regulation • Regulatory requirements for entirety of the project lifecycle • Current level of community support for project(s) • Estimated return upon investment.
<p>Proposed future contribution of CCS operations upon reducing Scope 1 and 2 emissions</p>	<ul style="list-style-type: none"> • A clear statement regarding an organisation's intention to utilise CCS to reduce Scope 1 and 2 emissions, including the technological and storage applications utilised. • Details of the anticipated percentage of the organisation's emissions that will be covered by the CCS operations, throughout the lifetime of the project. • Project details to the extent that they are available.

Scope 3 emissions reduction reporting

Issues addressed under this reporting theme

- Description of existing low-carbon goods and services and how they reduce Scope 3 emissions including disclosure of taxonomy or method used to classify them as low-carbon

Table 13: CCS-Specific methodology - Scope 3 emissions reduction reporting

SCOPE	QUALITY
Current contribution of the sale of low-carbon products and services that utilise CCS towards reducing Scope 3 emissions	<ul style="list-style-type: none"> • Description of how the company classifies existing products and services as low carbon where CCS is employed. • Disclose the taxonomy or methodology used to classify products and services as low carbon. • Explain the value of 'Green Revenues' from the sale of low-carbon goods and services (employing CCS), in the context of the organisation's overall sales. • Disclose the use of any scheme used to classify green revenues generated from the sale of low carbon goods and services that utilise CCS (e.g., the Climate Bonds Initiative, the Corporate Knights scheme) • Provide detail of the quantity of CO₂ equivalent reduced from the company's Scope 3 emissions, due to the sale of low-carbon goods and services that employ CCS, in a particular reporting year • Current engagement in activities, including R&D, to drive investment in low-carbon goods and services and solutions that employ CCS technologies. • Contribution of CCS accounted for within emissions from sale of products/services allocated to customers.
Current contribution of CCS operations towards reducing Scope 3 emissions	<ul style="list-style-type: none"> • Detailed statement as to the organisation's use of CCS to reduce Scope 3 emissions, including the CCS application and storage site. • Detail of the quantity of CO₂ equivalent reduced as a direct consequence of CCS in the relevant reporting year. • Provide information as to the progress/performance of the operations to-date, including the emissions reductions achieved through CCS since the commencement of operations. • A formal timeline including the start date for CCS capture and storage operations. • Provide detail of the quantity of CO₂ captured, exported and/or stored. • Detailed overview of any project, to include (but not limited to) the following details: <ul style="list-style-type: none"> • Location of the capture plant and storage site • Annual amount of CO₂ currently/anticipated to be captured • Cumulative CO₂ injected and stored (tonnes of CO₂) • Costs (pipeline costs, cost per ton of CO₂ over the life of the project) • Existence of commercial agreements to support commerciality of project (e.g., offtake contracts) • Monitoring and verification programme • Statement as to the management of project risks (e.g., long-term liability and insurance) • Recognition of abatement through crediting schemes, voluntary or statutory carbon markets, or carbon regulation • Regulatory requirements for entirety of the project lifecycle • Current level of community support for project(s) • Estimated return upon investment.
Proposed future contribution of CCS activities towards reducing Scope 3 emissions	<ul style="list-style-type: none"> • A clear statement regarding an organisation's intention to utilise CCS to reduce Scope 1 and 2 emissions, including the technological and storage applications utilised. • Details of the anticipated percentage of the organisation's emissions that will be covered by the CCS operations, throughout the lifetime of the project. • Project details to the extent that they are available.

Outreach and collaboration

Issues addressed under this reporting theme

- Public policy engagement
- Climate related collaboration

Table 14: CCS-Specific methodology - Outreach and collaboration

SCOPE	QUALITY
A clearly articulated vision of the technology's relevance to an organisation	<ul style="list-style-type: none"> • Development of a formal statement regarding CCS deployment as relevant to the organisation's operations and climate mitigation and/or net zero strategy. <ul style="list-style-type: none"> • To include details of proposed capacity and intended deployment timelines.
Engagement in public policy discussion surrounding CCS in relevant jurisdictions	<ul style="list-style-type: none"> • Examples of an organisation's activities in supporting the development of CCS-specific policies and/or initiatives, in jurisdictions material to operations: <ul style="list-style-type: none"> • To include detail of responses or submissions to government reviews, consultations, or instances of call for evidence. • Detail of an organisation's position on CCS-specific issues within these public policy discussions.
Involvement in national, regional, or international CCS initiatives	<ul style="list-style-type: none"> • Participation in, or memberships of, any CCS-focused organisations; including private or public-sector initiatives, membership-based organisations, or associations. • Examples of engagement within working groups, advisory boards, or wider networks, that support the operation and activities of these initiatives. • Details of the funding provided for CCS-specific initiatives, or to support the delivery of discrete projects or programmes of work.
Support for CCS research	<ul style="list-style-type: none"> • Amount of funding (including in-kind support) provided to academic and/or research organisations, to support CCS-specific research. • Amount of funding provided for internal research programmes on CCS. • Description of the scope of this research, progress to-date, its ultimate outputs, and an indication of the impact and relevance of these research deliverables in supporting deployment, or the organisation's CCS objectives.
Communication activities aimed at supporting CCS deployment	<ul style="list-style-type: none"> • Description of activities aimed at assisting the more widespread understanding of the benefits of CCS deployment, at a national, regional, or international level. • Examples of successful community engagement, knowledge-sharing and outreach practices that have demonstrated a benefit to an organisation's CCS-specific activities. • Provision or support for education programmes, within schools, universities, or other fora, aimed at knowledge-sharing or enhancing the understanding of CCS in a climate change context. • Sponsorship or funding of CCS-specific events, for example corporate or academic conferences.



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