Emerging Environmental Requirements and Expectations - Oil and Gas Supply Chains

Final Report

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EMERGING ENVIRONMENTAL REQUIREMENTS AND EXPECTATIONS - OIL AND GAS SUPPLY CHAINS

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1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Newfoundland & Labrador Environmental Industry Association (NEIA) to conduct a literature review of select companies to evaluate and identify Environmental, Social and Governance (ESG) trends in the oil and gas industry and supply chain intense companies. The focus of the scope of work was to document trends related to ESG, greenhouse gas (GHG) emissions reduction targets and net-zero commitments, identify emerging expectations in the industry and make recommendations for small and medium size enterprises (SMEs) participants within the oil and gas supply chain.

With an emerging focus on ESG and sustainability, companies are strategically conducting business with like-minded partners and vendors, who have aligned goals and values. Implementing a robust ESG program allows companies to remain competitive, reduce potential risk by reassessing existing practices and introducing comprehensive risk management processes, provide transparency especially in today's environment where public perception has considerable influence, and satisfy stakeholder and investor expectations. The following will look at trends in ESG, emerging expectations and provide recommendations for consideration by supply chain participants.

2.0 SUSTAINABILITY AS VALUE CREATION

Corporate sustainability can drive value creation within an organization. Companies are facing increasing pressure to report and manage ESG topics. Embedding sustainability within an organization can create value in some of the following ways:

- Employee relations – employees are more likely to accept offers and stay with companies that are sustainable.
- Customer loyalty – more awareness by individuals and corporations that want to do business with like-minded individuals.
- Improved public relations – through avoided negative media and improved public perception.
- Operational efficiency – by becoming more efficient, companies can recognize increased production and lower operating costs directly impacting the bottom line.
- Risk management – understanding and managing ESG risks results in improved corporate resilience potentially reducing costs associated with financing and insurance while increasing investor value.

3.0 LITERATURE REVIEW, INTERVIEWS, AND GHG EMISSIONS REDUCTION & NET-ZERO CARBON INITIATIVES

3.1 LITERATURE REVIEW SUMMARY

There is a growing number of companies embedding sustainability in their operations as expectations on corporate responsibility and transparency have become prevalent. This trend is driven by regulatory changes, pressure from investors and stakeholders, promotion of international guidelines, and the requirement for more comprehensive approaches to risk management.

As members of Newfoundland & Labrador Oil & Gas Industries Association (NOIA) and Newfoundland and Labrador Environmental Industry Association (NEIA), and regular participants of local conferences and tradeshows, it is Stantec's understanding from these interactions that environmental performance is currently a secondary metric in the local supply chain, while it is an emerging and principal metric in national and global markets. We expect this trend to increase and recognize that having a strong sustainability program can be a market differentiator for companies.

Stantec was retained by NEIA to help identify trends in emerging environmental requirements and expectations in international offshore oil and gas supply chains through literature review of publicly available reporting on Environmental, Social, and Governance (ESG) disclosures. The companies selected for the literature review were determined in conjunction with NEIA and focused on companies that were important within the oil and gas sector, ESG leaders, and those that were actively engaged and managing ESG within the supply chain. The companies therefore included those in the oil and gas sector; energy sector; retail sector; and consumer, pharmaceutical, and medical devices industry as presented in **Table 1**.

Table 1 Selected Companies for Literature Review

Company Name	Industry Sector
Equinor	Oil and Gas
BP	Oil and Gas
Ørsted	Energy
Chevron	Oil and Gas
BHP	Oil and Gas, and Mining
ExxonMobil	Oil and Gas, Chemical Manufacturing
Repsol	Oil and Gas
Royal Dutch Shell PLC (Shell)	Oil and Gas
Total	Oil and Gas
Walmart	Retail
Johnson & Johnson	Consumer, Pharmaceutical, and Medical Devices

The literature review informed an analysis and evaluation of ESG reporting in the industry, using a disclosure ranking criterion. The literature review included publicly available industry reporting on ESG disclosures such as Sustainability Reports; Annual Reports and Proxy Statements; Integrated Management Reports; Environment, Climate Change, and Energy Reports; CDP Reports; Task Force on Climate-related Financial Disclosures (TCFD); ESG Performance Data; and various publicly available company polices and commitments (examples: human and labour rights; health, safety, security, and environment; codes of conduct; supplier expectations; indigenous peoples; biodiversity; diversity and inclusion).

The disclosure ranking criteria considered a total of 135 questions across the ESG spectrum, with a focus on environment. The questions were grouped into 25 categories (i.e., Greenhouse Gas Emissions, Materials Management, Business Ethics, Human Rights, etc.), and were classified as either Environment, Social, or Governance. The comprehensive list of questions and categories considered in the disclosure ranking criteria was reviewed and approved by NEIA and can be found in **Appendix A**.

Literature reviews were conducted and evaluated for each of the 135 disclosure ranking criteria, for the companies listed in **Table 1**, based on publicly available literature, and the transparency in which the company published its information. A disclosure ranking criterion was deemed to have been satisfied if the company publicly disclosed sufficient information for a given criteria, demonstrating for example, disclosure and/or reporting of ESG performance data and target settings, monitoring and management programs, implementation of policies, commitments, and frameworks, ESG initiatives, and best practices.

An overview of observations and trends for each of the 25 categories from the literature review is provided in **Table 2**.

Table 2 Literature Review Observations/Trends

Classification	Category	Literature Review Observations/Trends
Environment	Air Emissions	• 91% of the companies reviewed disclose quantitative information on significant air emissions such as SOx, NOx, VOCs disclosed. • Companies monitor and manage impact of operations on local air quality.
	Biodiversity	• There is a strong focus on biodiversity, with 100% of the companies reviewed disclosing the presence of a biodiversity program. • 91% of the companies researched publicly disclose a commitment or position on biodiversity, in terms of avoidance and/or implementing mitigation measures that relate to projects or operations in or near protected areas and priority sites for biodiversity conservation. For example, at the time of research, Shell's publicly disclosed commitments include "to not explore for, or develop, oil and gas resources in natural and mixed World Heritage Sites; to further improve the way it operates in International Union for Conservation of Nature (IUCN) Category I-IV protected areas, and areas of high biodiversity value; to publicly report on its activities in IUCN Categories I-IV; and to work with IUCN and others to help safeguard protected areas".
	Climate Risk and Opportunities	• All companies reviewed disclose the integration of the impact of climate-related risks into a comprehensive risk management process. • 100% of the companies reviewed disclose initiatives and investments to support low carbon activities and opportunities, such as investments in renewable energy, CCS technology, biofuels manufacturing.
	Decommissioning	• Minimal to no information disclosed on approach to decommissioning activities and impact of such activities for offshore and onshore assets.
	Energy Use	• 18% of the companies reviewed disclose operations are either certified or follow ISO 50001 practices. • All companies reviewed disclose its total energy use, with 82% of companies disclosing information derived from renewable and non-renewable sources.
	Flaring and Venting	• 75% of companies in the oil and gas sector disclose information on its flaring and venting emissions, with 88% of the companies disclosing a reduction program and/or reduction target. Equinor, ExxonMobil, Repsol, Shell, and Total have a "zero routine flaring by 2030" target and endorse the World Bank "Zero Routine Flaring by 2020" initiative (with exception to ExxonMobil).

Table 2 Literature Review Observations/Trends

Classification	Category	Literature Review Observations/Trends
Environment	Greenhouse Gas Emissions	• 100% of the companies disclose its Scope 1, Scope 2 and Scope 3 emissions and targets for reducing GHG emissions. • Scope 3 reporting of sources varies with each oil and gas company, but include sources such as capital goods, upstream transportation and distribution, downstream transportation and distribution, business travel, employee commuting, processing of sold products, use of sold products, purchased goods and services, and fuel and energy related activities. • Scope 3 reporting of sources for Walmart and Johnson and Johnson include: purchased goods and services, capital goods, fuel and energy related activities, upstream transportation and distribution, waste generated in operations, business travel, employee commuting, upstream leased assets, downstream transportation and distribution, use of sold products, end of life treatment of sold products, and downstream leased assets (Walmart). • 73% of the companies report GHG emissions data to the CDP. Of the 8 companies reviewed that report to the CDP, 3 scored a B grade and 5 scored an A- to A grade for the most recent year of submission. Among the A grade include: Orsted, Walmart, and Johnson & Johnson.
	Management	• Companies indicate the presence of an Environmental Management System (EMS), with 89% of the companies disclosing that its EMS is attested to or is in accordance with ISO 14001 at an operational level. Some companies identify criteria for ISO 14001 certification (example: Johnson & Johnson manufacturing and R&D sites with less than 50 employees are exempt from internal requirement to have ISO 14001 certification).
	Materials Management	• 91% of the companies disclose quantitatively its total hazardous waste generation; however, details on hazardous waste disposal programs are not disclosed by any of the companies. • 82% of companies provide quantitative information on its non-hazardous waste. • Best practices observed include taking action to help address plastic waste in the environment by increasing plastic recyclability and supporting improvements in plastic waste recovery (ExxonMobil); promoting recycling and reusing through projects such as recycling lubricant containers or recovering oil from the pyrolysis of plastics that cannot be mechanically recycled (Repsol); ambition to use 1 million tonnes of plastic waste as feedstock at Shell chemical plants by 2025 (Shell); target to produce 30% of Total's polymers from recycled materials by 2030 (Total); Walmart's Project Gigaton which is Walmart's initiative to avoid 1 gigaton of CO_2e from its global value chain by 2030; increase the recyclability of Johnson & Johnson's consumer health product packaging to 90+% weight basis in key markets where mature recycling infrastructure exists.
	Methane	• 100% of companies in the oil & gas sector disclose its methane emissions, with 78% disclosing a methane reduction program or target. For example, BP, Shell, and Total have set a methane intensity target of 0.2% by 2025.

Table 2 Literature Review Observations/Trends

Classification	Category	Literature Review Observations/Trends
Environment	Spills	• 88% of the oil & gas sector companies provide quantitative data on significant petroleum spills. However, 0% of the companies disclose separately significant hydrocarbon spills from product transportation by third parties.
	Water	• 91% of companies disclose its total freshwater withdrawals, with 64% providing information on strategies to mitigate water withdrawal or scarcity risks. Best practices include water resources screening assessments (Chevron); site-specific water management strategies that include water conservation technologies, use of alternative water sources, recycling of municipal and industrial wastewater, and collection of rainwater (ExxonMobil); Repsol Water Tool (RWT) which analyzes the exposure of its operations to the risk of water shortages; Local Water Tool (LWT) for Oil & Gas from the Global Environmental Management Initiative (Total). • Only BHP endorses the UN Global Compact CEO Water Mandate.
Social	Community	• 91% of the companies disclose its social investment (e.g., dollars donated).
	Diversity & Inclusion	• 64% of the companies disclose a gender diversity strategy or commitment to appropriate gender representation; however, the strategy/commitment is typically at workforce or management level only and not at the board level. • 27% of the companies disclose a diversity strategy beyond gender at the workforce and management level, with only 9% at the board level. Walmart and Johnson & Johnson have disclosed more comprehensive Diversity & Inclusion reports compared to the oil & gas sector.
	Human Rights	• 100% of the oil & gas companies are a Corporate Participant to the Voluntary Principles on Security and Human Rights (VPSHR). • All companies indicate that their human rights efforts follow specific recognized public conventions such as the International Bill of Human Rights, ILO Declaration on Fundamental Principles and Rights at Work, Ten Principles of the UN Global Compact, UN Guiding Principles on Business and Human Rights, Volunteer Principles on Security and Human Rights. • Human rights policies indicate that it applies the same standards to suppliers/vendors.

Table 2 Literature Review Observations/Trends

Classification	Category	Literature Review Observations/Trends
Social	Indigenous Peoples	• 36% of the companies disclose its impacts to Indigenous Peoples. • 46% of the companies disclose how it engages with Indigenous Peoples, following international standards for consultation and engagement with Indigenous Peoples, including the International Labour Organization (ILO) Indigenous and Tribal Peoples Convention (ILO169), the UN Declaration on the Rights of Indigenous People (UNDRIP), International Finance Corporation (IFC) Performance Standard 7, IPIECA Indigenous Peoples and the oil and gas industry, and principles of free, prior and informed consent (FPIC). • Repsol has disclosed its best practice of having at least one of the following elements: public consultation and consultation plans; reference studies; social impact evaluations and action plans; relocation plans; community development plans; claim and complaint procedures; and other documents form community information centres at its 14 operations in 7 countries that take place near or adjacent to the territories of Indigenous communities.
	Labour, Health and Safety	• All companies reviewed disclosed the presence of a Health & Safety Policy. While specific disclosure of a separate **occupational** health & safety policy or addressing **occupational** health & safety within the disclosed Health & Safety policy was not widespread, it can be inferred that such policies exist for all the companies reviewed through disclosure of their ESG reported data such as serious injuries, recordable injuries, fatalities, work related illness, and psychosocial working environment.
	Process Safety	• 88% of the oil & gas sector companies report Tier 1 and Tier 2 process safety events in different metrics such as aggregate of Tier 1 and Tier 2 events; by major business activity; and by process safety event rate.
	Product Stewardship	• 82% of the companies disclose its approach to sustainable materials consumption, including approaches to reduce, reuse and recycle products. • Best practices include partnering with the International Association of Oil and Gas producers in combatting plastic pollution of the oceans; assessing the use, regulation, limitations and possible substitution of chemicals factually or potentially containing microplastic; investing in enhanced recycling technology designed to turn opaque and difficult to recycle PET plastic waste into recycled feedstocks that can be used to make new PET plastic packaging; recycling used oil back into useful motor oils for market; development of recycled plastics as chemical feedstock; recycled oil as feedstock by refineries to produce fuels or lubricants, and Johnson & Johnson's Earthwards Program, a product stewardship program for encouraging the development of more sustainable products.
	Security & Risk	• While not all companies reviewed disclose their management approach to promoting resilience to cybersecurity threats, all companies reviewed discussed the types and/or impact of security and cybersecurity threats in their Annual and/or Sustainability Reports, to varying degrees. Based on the discussions in these reports, it can be concluded that management approach to promote resilience to cybersecurity threats are established within these companies, but are not however, disclosed in great detail.

Table 2 Literature Review Observations/Trends

Classification	Category	Literature Review Observations/Trends
Social	Stakeholders and Society	• All companies disclose a Code of Vendor Conduct or Supplier Expectations Policy, with 45% of them identifying a generic supply chain audit. • 73% of the companies are a participant to the UN Global Compact. • All companies report on their progress towards UN Sustainable Development Goals.
	Transport Safety	• 27% of the companies disclose risk management approaches to transport safety. • Best practices by Shell including working with their contractors in the maritime business to improve the quality and consistency of their safety management. This includes developing more effective tools to learn from incidents and improve behaviours. In 2019, Shell and contractors visited more than 4,000 ships to engage mariners on safety and make the programme more effective. In 2019, Shell worked with offshore helicopter safety association HeliOffshore and the International Association of Oil & Gas Producers (IOGP) in a number of areas to drive safer ways of working with aircraft.
	Workforce Non-retaliation & Grievance Mechanisms	• 91% of the companies publicly disclosed Code of Vendor Conduct or Supplier Expectation Policy address freedom of association, with 73% also addressing collective bargaining.
Governance	Business Ethics	• 100% of the companies publicly disclose a Business Ethics Policy or Code of Conduct, with 64% of the Policy or Code of Conduct extended to include suppliers. Note that 100% of the companies have a separate Code of Vendor Conduct or Supplier Expectation Policy.
	ESG	• For all companies, the highest level of oversight for the company's sustainability / ESG program is either at Board level or Executive Management level. • 82% of the companies have a dedicated Environment, Corporate Social Responsibility, Health and Safety, or Sustainability committee. • 82% of the companies also indicate a link between consideration of ESG risks and performance, and executive remuneration.

As per the CDP's Global Supply Chain Report 2020, supply chain emissions are on average 11.4 times higher than operational emissions[1]. Companies have increasingly begun focusing on the actions needed not only in their own operations, but those in their supply chain[1]. Expectations, however, are not limited to just GHG emissions, but an overall expectation of Environmental, Social, and Governance performance in the supply chain.

All 11 companies researched publicly disclose a Code of Vendor Conduct or Supplier Expectations Policy, setting standards and minimum requirements for suppliers. These typically include but are not limited to compliance with applicable laws and regulations, requirements for health, safety and environment, anti-bribery and corruption, human rights, labour rights and modern slavery, non-discrimination, grievance processes and freedom of association, and cybersecurity. From an environmental performance perspective, 55% of the Code of Vendor Conduct or Supplier Expectations Policies specifically address the environmental impact of supplier products. Supply chain audits are emerging, with 45% of the Code of Vendor Conduct / Supplier Expectations Policy disclosing auditing or inspection of suppliers. For example, Shell specifies that contracts with certain high-risk activities included in the scope of work, may require a more in-depth verification of the supplier's management systems, which may also require on-site audits. The outcomes of these assessments/audits influence the decision on awarding the contract and also how the contract Health, Safety, Security and Environmental and Social Performance risks would be managed by the supplier and Shell.

Walmart and Johnson & Johnson, who are listed as "companies proactively working with their suppliers to ensure that sustainability is present in every part of their value chain" in the CDP Global Supply Chain Report 2020[1] have disclosed deforestation commitments as part of its supply chain transparency and responsible sourcing. For example, Walmart has disclosed the following goals:

- By 2022, Walmart aims to only source fresh beef from the Brazilian Amazon and Cerrado, and the Gran Chaco in Argentina and Paraguay that has been produced with no deforestation or conversion (i.e., conversion of deforested land for non-forest use).
- By 2023, Walmart aims to only source soy that has been produced with no deforestation or conversion.
- By 2025, Walmart's private brand products containing any form of palm oil will be sourced with no deforestation or conversion in accordance with the principles and criteria of the Roundtable on Sustainable Palm Oil (RSPO) segregated supply chain systems, or equivalent standards.
- By 2025, Walmart's private brand products made of pulp, paper, and timber will be sourced deforestation and conversion-free.

Walmart's global suppliers will be required to maintain comprehensive records and verification, as well as disclosure of origin and demonstrate deforestation and conversion-free sourcing to the origin through traceability reports.

Engaging suppliers in product stewardship and reducing supply chain GHG emissions is also emergent and is being demonstrated by companies such as Walmart and Orsted, who is also on the CDP's Global

[1] "Transparency to Transformation: A Chain Reaction", CDP Global Supply Chain Report 2020, February 2021

Supply Chain Report 2020 list of companies proactively working with their suppliers. Project Gigaton is Walmart's initiative to avoid 1 gigaton of CO_2e from it the global value chain by 2030. Suppliers are encouraged to set a measurable emissions reduction targets through categories such as energy, agriculture, waste, product, deforestation, or packaging and report annually on the progress. Suppliers are incentivized by Walmart's publicly disclosed Supplier Recognition[2].

The CDP, formerly the Carbon Disclosure Project, has become a key reporting program for companies to not only disclosure to their investors, customers and communities but as a requirement for supply chain participants. CDP has its own discrete grading/ranking system for climate change, water security and forest submissions. The Climate Change CDP disclosure is the most common disclosure and scores may either be made available publicly or just to companies that supply chain participants are reporting to. The reporting process can result in significant need for data availability and management.

Table 3 provides a synopsis of the 2020 CDP grading ranking for each of the 11 compaines reviewed.

Table 3 Summary of 2020 CDP Grading

Company	Program[3]		
	Climate Change 2020 CDP	**Water Security 2020 CDP**	**Forests 2020 CDP**
Equinor	B	Does Not Report	Does Not Report
BP	Does Not Report	Does Not Report	Does Not Report
Orsted	A	Does Not Report	Does Not Report
Chevron	Does Not Report	Does Not Report	Does Not Report
BHP	B	Does Not Report	Does Not Report
ExxonMobil	Does Not Report	Does Not Report	Does Not Report
Repsol	A-	Does Not Report	Does Not Report
Shell	B	Does Not Report	Does Not Report
Total	A-	A-	Does Not Report
Walmart	A	C	C
Johnson & Johnson	A	A-	A- B

In recent years, companies have begun reporting how their sustainability achievements support the UN SDGs. Launched in 2015, the UN SDGs are 17 country level goals that form the basis for a more sustainable future (Figure 1).

[2] https://walmartsustainabilityhub.emissionscalculators.walmart.com/main/recognition
[3] https://www.cdp.net/en
https://www.corporateknights.com/reports/2021-global-100/2021-global-100-ranking-16115328/

Figure 1 UN SDGs[4]

Typically, a company will determine what goals are relevant to their organization and how their actions help to achieve these targets. In other words, there needs to be progress achieved to claim a contribution to a UN SDG.

Another trend observed by oil and gas companies is the use of International Association of Oil & Gas Producers (IPIECA) sector specific guidance for sustainability reporting[5]. The IPIECA provides 6 modules covering the reporting process, governance and business ethics, climate change and energy, environment, safety, health and security, and social. The modules contain direction and guidance for comprehensive reporting that are specific to oil and gas participants.

3.2 GREENHOUSE EMISSION REDUCTIONS AND NET-ZERO CARBON INITIATIVES

All 11 companies researched disclose targets for reducing GHG emissions. At the time of research 82% of the companies set goals to achieve net-zero emissions between now and 2050. **Appendix B** provides a detailed summary of the targets and timelines. In addition, a number of public facing statements/commitments from other large companies is provided in Appendix B.

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[4] https://www.un.org/development/desa/disabilities/about-us/sustainable-development-goals-sdgs-and-disability.html
[5] https://www.ipieca.org/our-work/sustainability-reporting/sustainability-reporting-guidance/

4.0 EMERGING EXPECTATIONS FOR SUPPLY CHAIN PARTICIPANTS

An increasing number of companies are choosing to do business with like-minded companies. Similar to how companies began to implement and pass down Health and Safety requirements and standards decades ago, sustainability programs are being operationalized in much the same way. Corporations and business leaders have begun to yield their influence to drive supply chain participants to follow ESG through limiting access to procurement, using ESG to evaluate supply chain participants or embedding ESG within contracts themselves. Supply chain questionnaires on ESG are currently being used in some industries to gain access to tender documents or used in a scoring process. In other cases, scoring may become part of an evaluation criteria for the award of contract. Others are implementing ESG within contracting requirements. Supply chain providers for oil and gas companies need to recognize the risk associated with sustainability trends and position themselves to respond accordingly. A company's functioning ESG program may be a differentiator in maintaining and/or expanding market share.

It is expected that there will be an increasing pressure on the oil and gas supply chain partners to report to programs such as CDP as a supply chain participant and set forth policies consistent with risks that larger corporations are identifying. This has been an ongoing trend for many companies operating in industries where supply chains are responsible for a significant contribution to greenhouse gas emissions, water/energy use and other ESG factors. Around 90% of the over 900 companies that have set science-based targets have also set Scope 3 (Supply Chain) reduction targets as well.

As companies begin to implement commitments to net zero, they will also be looking to the supply chain to take meaningful action. This may include requiring supply chain participants to set their own science-based targets or make commitments to be carbon neutral.

For companies looking to assess ESG within their supply chain, there are often a number of similar yet different ESG standards that may be considered for reporting. The most common standards for reporting ESG topics include Global Reporting Initiative (GRI), and CDP (formerly the Carbon Disclosure Project). These standards are built on framework of the ISO 14064 suite of standards providing guiding principles relate to reporting.

As more and more companies are beginning to make disclosures consistent with the TCFD either under stock exchange requirements or on a voluntary basis as a best practice, the implications will likely trickle down the supply chain. Large companies strive to understand not only their risk but their supply chain risk vulnerabilities to climate change and how adaptation measures can lower their risk. At the same time, they seek to understand the transitional risk related to both the cost of carbon and behavioral changes. As the cost of carbon is implemented and/or increases, it is expected to impact supply chain costs as energy will become increasingly expensive impacting both the operating costs within the supply chain as well as transportation costs related to goods and services.

As these companies look to manage their own risk, they will also be examining the resilience of their supply chain to identify risks to their own organization. It is therefore important that participants of the supply chain understand their vulnerabilities to climate change and sustainability in general.

4.1 NET-ZERO EXPECTATIONS FOR SUPPLY CHAIN PARTICIPANTS

An increasing number of companies are committed to achieving aggressive GHG emission reduction targets, whereas others are committing to carbon neutrality both within their operations and within their supply chain by 2050. Many supply chain participants may be expected to set science-based targets through the Science Based Target initiative (SBTi)[6], if not establish carbon neutral goals of their own.

There has been significant increase in companies committing to the use of renewable energy. RE100 is a group of over 280 influential companies that have made a commitment to the use of 100% renewable power. Many of these companies are beginning to also require the use of renewable power by supply chain providers. Generally, supply chain participants are required to acknowledge and agree to the use of renewable energy and agree to provide evidence of renewable energy (i.e. renewable energy certificates) and agree to audits by their customers.

For instance, Orsted has recognized that the second-largest source of indirect emissions come from their offshore wind business supply chain and have identified the most carbon-intensive activities and the fuels burned by the construction vessels to transport and install components offshore. As a result, in 2020 Orsted launched a program to engage its suppliers to decarbonize the manufacturing and installation of offshore wind farm components and vessel services, with the initial engagement focused on strategic suppliers to: disclose emissions and set science-based carbon reduction targets; use 100% renewable electricity in the manufacturing of wind turbines, foundations, cables, substations, and components (identified as the most carbon-intensive activities); and optimize vessel fleet and develop a roadmap to power vessels with renewable energy.

Small and medium size enterprises (SMEs) should begin to track activity data in order to support GHG emission inventory development and establish baseline (business as usual) GHG emissions scenarios.

4.2 BEST PRACTICE FOR SUPPLY CHAIN PARTICIPANTS

As corporations are looking to drive ESG, their opportunity to influence is generally through their contracting and procurement agreements. The following best practices are recommended for oil and gas supply chain participants:

- Implement an Environmental Management System certified under or in alignment with ISO 14001
- Quantify scope 1 – 3 greenhouse gas emissions using ISO 14064-1;
- Report to CDP (formerly the Carbon Disclosure Project);
- Understand material topics for stakeholders and develop policies addressing any gaps

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[6] https://sciencebasedtargets.org/

- Sustainability reporting in alignment with Global Reporting Initiative (GRI) and International Association of Oil & Gas Producers (IPIECA) and calling out achievements in alignment with the UN SDGs;
- Undertake 3rd party verification of sustainability report or at minimum environmental metrics such as greenhouse gas emissions, energy use, and water.
- Consider vulnerabilities to transitional and physicals risks of climate change and disclose climate change risk in alignment with Task force for Climate-related Financial Disclosures (TFCD).
- Set science-based targets aligned with limiting global temperature rise to 1.5°C recognizing that customers may impose carbon neutral or additional requirements.
- Operationalize ESG within the organization to achieve improvements in environmental metrics and reduce climate change risk
- Look at opportunities for renewable electricity generation and supply in advance of potential contracting obligations.

It is generally best practice to hire a dedicated and experienced resource in the executive management team or higher to oversee an ESG program and begin to look at operationalizing sustainability within an organization. Various training programs on a variety of reporting standards are available. In addition, organization should consider how they can engage with reporting programs and associations to maintain current on expectations and reporting requirements. For companies looking to expand responsibilities of existing personnel, the following ESG related training may be of benefit to the individual:

- ISO 14001 and ISO 14064-1 training offered through organizations such as the Canadian Standards Association
- AA1000
- ISO 31000 Risk management training
- GRI professional certification programs and training through the GRI Academy
- CDP through a variety of service providers

5.0 OVERVIEW OF BEST PRACTICES IN ESG IMPLEMENTATION

The following section provides a high-level overview of the process that a company can take to begin their sustainability journey, build corporate resilience and better prepare for future ESG requirements.

5.1 STRATEGY

An ESG Program is an organization's compass - it sets the direction and operationalizes a company's approach to sustainability. By using an ESG Program, only initiatives, indicators and targets that are directly linked and aligned to focus areas are material topics. This ensures that there are strong links between an organization's ESG reporting, the sustainability vision, and relevant policies and/or initiatives.

The process to establish an ESG program is typically completed in three stages as outlined in Figure 2 below. The materiality assessment is to understand which topics are important both to the organization and its stakeholder. This allows companies to focus efforts on topics that have meaningful impact to all.

The sustainability framework captures the management, targets, actions and reporting of material topics. The last step is an external facing sustainability report that is made publicly available to stakeholders.

Figure 2 Sustainability Process

The approach to developing a holistic sustainability program is built on the three pillars of ESG. These pillars, shown in Figure 3, set the foundation for developing a program to manage the topics contained under each one.

Figure 3 Sample ESG topics

5.2 IMPLEMENTATION

5.2.1 Conduct a Materiality Assessment

A materiality assessment is the process of identifying, refining, and confirming the potential environmental, social, and governance aspects that could affect the company's business and its key stakeholders (e.g., customers, employees, investors, government). Conducting a materiality assessment helps determine where to focus energy and resources on what ESG aspects matter most. The result of the materiality assessment is a short list of relevant (material) aspects that can be used to inform company strategy, targets, and reporting.

The material aspects define what is important for the organization to report. Indicators are then used to track the performance on these aspects. An ESG aspect is generally considered material when:

- Stakeholders indicate significant concern for the ESG aspect, and
- The ESG aspect affects the organization's ability to pursue its long-term business and sustainability goals

5.2.2 Develop an ESG Framework

The ESG Framework is an organization's compass - it sets the direction and operationalizes a company's approach to sustainability. By using this ESG Framework, only initiatives, indicators and targets that are directly linked and aligned to focus area goal statements. The ESG framework documents the company's sustainability vision and include an overall monitoring program. This ensures that there are strong links between the overarching sustainability vision, material aspect areas and goal statements and relevant policies and/or initiatives established by the organization.

IPIECA provides sector specific guidance for oil and gas companies for alignment within the sector. It is recommended that this document be consulted for the development of an ESG framework and reporting recommendations.

5.3 REPORTING

An ESG Report is used to monitor and report to stakeholders on ESG performance, where the company is meeting objectives and how an organization will improve. Reporting helps in assessing the effectiveness of policies towards meeting ESG objectives and provides supporting information to guide future decisions. Most importantly, it keeps a company accountable.

An organization should consider identifying a relevant reporting program, such as the Global Reporting Initiative (GRI), CDP (formerly the Carbon Disclosure Project), IPIECA or any stock exchange reporting requirements/recommendations. In consideration of potential reporting programs, it is important to understand which programs customers are using. For instance, CDP is often used to gather information on the supply chain and provides customers with a reporting program and evaluation that they may chose to utilize in determining procurement and partnerships.

Furthermore, organizations should consider reporting its achievements that support the United Nations Sustainability Development Goals (UN SDGs) which has become an emerging trend over the last few years.

5.4 ASSURANCE

Corporations that have developed sustainability and carbon footprint reports generally move towards having the reports verified by an independent third party. The third-party assurance statement signals to intended users that they may rely on the information being provided. Full third-party assurance is only recommended for organizations with significantly robust sustainability and data management system.

Early reporters may which to consider verification of limited scope such as greenhouse gas emissions, water use, energy, etc. An assurance statement provides credibility to reported environmental metrics.

6.0 CONCLUSION

Sustainability programs can build long term value and business resilience through the identification and actioning of material topics. Large corporations are making commitments to ESG and specifically identifying emission reductions and carbon neutral goals. Customers, particularly those with substantial supply chains, may require goods and service providers to report and disclose key indicators. This trend is expected to continue along with the potential requirement for commitments to science-based targets or net zero emissions. A company's sustainability program can be a real differentiator not only to its direct operation but its ability to maintain and expand its customer base.

APPENDIX A

Criteria

Item	Category	Question
1	Environment: Air Emissions	Does the company disclose specific targets for reducing NOx, SOx, and other significant air emissions?
2	Environment: Air Emissions	Does the company disclose quantitative information on significant air emissions?
3	Environment: Air Emissions	Does the company monitor and manage the impact of its operations on local air quality, including any technologies you use, such as those that remove or treat combustion emissions in operations or fuel products?
4	Environment: Biodiversity	Does the company disclose the presence of a biodiversity program?
5	Environment: Biodiversity	Does the company disclose a clear framework for evaluating projects in critical habitats or other areas with recognized high biodiversity value? E.g. policy, positions, goals, strategies, risk / impact assessments, mitigation plans and outcomes.
6	Environment: Biodiversity	Does the company describe processes for identifying and managing activities in sensitive operating areas, such as Biodiversity Actions Plans?
7	Environment: Biodiversity	Does the company provide a list and / or a percentage of projects and operations that are in or near protected areas and priority sites for biodiversity conservation?
8	Environment: Biodiversity	Has the company established any commitments, including avoidance and mitigation measures, that relate to projects and operations in or near protected areas and priority sites for biodiversity conservation?
9	Environment: Biodiversity	Does the company assess and manage biodiversity impacts within its supply chain?
10	Environment: Biodiversity	Does the company disclose quantitative and qualitative environmental information through CDP's forests questionnaire?
11	Environment: Climate Risk and Opportunities	Does the company disclose a climate change policy or equivalent information that specifically addresses the company's climate change risks, performance, and opportunities?
12	Environment: Climate Risk and Opportunities	Does the company's climate change disclosure describe the impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning?
13	Environment: Climate Risk and Opportunities	Does the company describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management?
14	Environment: Climate Risk and Opportunities	Does the company disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process?
15	Environment: Climate Risk and Opportunities	Does the company disclose its technology outlook on the transition to lower-carbon and renewable energy solutions, including any technology investment plans and the impact of technologies on energy supply and demand?
16	Environment: Climate Risk and Opportunities	Does the company disclose initiatives and plans to develop or implement CCS technologies.
17	Environment: Climate Risk and Opportunities	Does the company disclose its approach to existing or emerging GHG reduction regulatory programs in terms of risks and opportunities?
18	Environment: Climate Risk and Opportunities	Does the company disclose information on existing or planned supply of lower carbon products, such as gas and alternative energy sources, including scale, geographic spread, technologies and timescales?
19	Environment: Climate Risk and Opportunities	Does the company disclose that it engages and collaborates with stakeholders, including advocacy and lobbying for stronger environmental programs?
20	Environment: Climate Risk and Opportunities	How far into the future does the company monitor risk management procedures?
21	Environment: Climate Risk and Opportunities	Does the company's climate change disclosure include an impact scenario that references 2°C limits?
22	Environment: Decommissioning	Does the company disclose its approach to planning and executing decommissioning activities for offshore and onshore assets.?
23	Environment: Decommissioning	Does the company disclose its environmental and social (including economic) impact of its decommissioning work and any post-decommissioning monitoring plans in place?
24	Environment: Energy Use	Are the company's operations covered by a certified ISO 50001 or does the company reference ISO 50001 in connection with its energy efficiency management systems or strategies?
25	Environment: Energy Use	Does the company disclose its total energy use?
26	Environment: Energy Use	Does the company disclose information on energy derived from renewable and non-renewable sources?
27	Environment: Energy Use	Does the company disclose information on energy conservation programs and performance?
28	Environment: Energy Use	Does the company disclose the amount of electrical power used that is derived from renewable sources at any level other than enterprise (including facility, business unit, region, etc.)?
29	Environment: Energy Use	Does the company disclose a clear approach to reduce energy consumption from non-renewable sources?
30	Environment: Flaring and Venting	Does the company specifically disclose its flaring and venting emissions?
31	Environment: Flaring and Venting	Does the company disclose flaring and venting reduction programs or targets? If so, please note these.
32	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose its total Scope 2 GHG emissions?
33	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose its total Scope 3 GHG emissions? If yes, identify the emissions sources reported.
34	Environment: Greenhouse Gas (GHG) Emissions	Has the company obtained independent third-party verification for its GHG disclosure?
35	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose targets for reducing GHG emissions? (Identify the targets)
36	Environment: Greenhouse Gas (GHG) Emissions	Are the company's GHG emissions reduction targets clearly aligned with the 2°C scenario?
37	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose investments in or the use of lower carbon opportunities?
38	Environment: Greenhouse Gas (GHG) Emissions	Does the company report GHG emissions data to the CDP?
39	Environment: Greenhouse Gas (GHG) Emissions	Which is the most recent year the company has submitted GHG emissions data for to the CDP?
40	Environment: Greenhouse Gas (GHG) Emissions	If the company reports GHG emissions data to the CDP, what is its recent-year CDP score?
41	Environment: Greenhouse Gas (GHG) Emissions	Has the company, for the last three consecutive years, received lower than a C grade in any of CDP’s scoring methodologies?
42	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose its GHG emissions, disaggregated by business activity. For example, oil and gas production, refining
43	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose and provide a breakdown on its total Scope 1 GHG emissions?
44	Environment: Greenhouse Gas (GHG) Emissions	Does the company disclose net zero or reduction targets? List initiatives and target dates
45	Environment: Management Systems	Does the company disclose an enterprise level environmental policy?
46	Environment: Management Systems	Does the company's publicly disclosed environmental policy apply the same standards to suppliers or vendors?
47	Environment: Management Systems	Does the company disclose the presence of an Environmental Management System?
48	Environment: Management Systems	Does the company disclose that its Environmental Management System is certified and/or attested to ISO 14001?
49	Environment: Management Systems	Is the company as a whole ISO 14001 attested?

Item	Category	Question
50	Environment: Management Systems	Does the company disclose the percentage of the suppliers' operations covered by a certified ISO 14001 or EMAS environmental management system?
51	Environment: Management Systems	Does the company's publicly disclosed Code of Vendor Conduct address the environmental impact of supplier products or services?
52	Environment: Management Systems	Does the company's publicly disclosed Code of Vendor Conduct address supply chain audits for environmental management?
53	Environment: Materials Management	Does the company disclose its approach to materials management. This may include operational strategies to optimize design, minimize the amount of materials used, and promote efficient use while ensuring sustainable recovery and regeneration for further beneficial use.
54	Environment: Materials Management	Does the company disclose its total hazardous waste generation?
55	Environment: Materials Management	Does the company disclose its hazardous waste generation for any of its operations located outside its primary domicile (e.g. the U.S. for Russell 3000 companies) at any level other than enterprise (including facility, business unit, region, etc.)?
56	Environment: Materials Management	Does the company disclose details regarding its hazardous waste disposal program?
57	Environment: Materials Management	Does the company provide information about non-hazardous waste?
58	Environment: Materials Management	Does the company's disclosed information on non-hazardous waste include quantitative metrics?
59	Environment: Materials Management	Does the company disclose information on its waste management and recycling programs?
60	Environment: Materials Management	Does the company's disclosed information regarding targets for reducing hazardous and non-hazardous waste include quantitative targets?
61	Environment: Materials Management	Does the company's disclosed information regarding targets for reducing hazardous and non-hazardous waste include specific information on an implementation timeline?
62	Environment: Methane	Does the company specifically disclose its methane emissions?
63	Environment: Methane	Does the company disclose methane reduction programs or targets? If so, please note these.
64	Environment: Spills	Does the company provide data on significant spills?
65	Environment: Spills	Does the company disclose strategies and risk-based approach to prevent accidental releases of hydrocarbons / other materials to the environment?
66	Environment: Spills	Does the company disclose, in qualitative terms, any significant impact on the environment caused by a spill, particularly from larger releases or from a small release into a sensitive environment?
67	Environment: Spills	Does the company separately report significant hydrocarbon spills from product transportation by third parties?
68	Environment: Water	Does the company endorse the UN Global Compact CEO Water Mandate?
69	Environment: Water	Does the company disclose its total water withdrawals?
70	Environment: Water	Does the company disclose its total water freshwater withdrawals?
71	Environment: Water	Does the company disclose information on locations and risks associated with water withdrawal or scarcity?
72	Environment: Water	Does the company provide information on strategies to mitigate water withdrawal or scarcity risks?
73	Environment: Water	Does the company disclose water reduction programs or targets? If so, please note these.
74	Environment: Water	Does the company disclose how much water is recycled / reused?
75	Environment: Water	Does the company disclose its total produced water discharges? How is this information reported (e.g., annual average concentrations (in mg/l or ppm))?
76	Environment: Water	Does the company disclose efforts to manage discharges within local water environments where there is greater potential for environmental risks or benefits?
77	Governance: Business Ethics	Does the company have a publicly disclosed Business Ethics Policy or Code of Conduct?
78	Governance: Business Ethics	Does the company's publicly disclosed Business Ethics Policy or Code of Conduct extend to include suppliers?
79	Governance: Business Ethics	Does the company publicly disclose information on the use of corporate funds for the purposes of political advocacy, including lobbying, campaign contributions, and contributions to tax-exempt groups including trade associations?
80	Governance: Business Ethics	Does the company disclose political donations.
81	Governance: ESG	What is the highest level of executive oversight for the company's sustainability / ESG program?
82	Governance: ESG	Does the company describe management's role in assessing and managing climate-related risks and opportunities?
83	Governance: ESG	Does the company describe the board's oversight of climate-related risks and opportunities?
84	Governance: ESG	Does the company report sustainability metrics in accordance with the Global Reporting Initiative (GRI)?
85	Governance: ESG	Does the company provide external assurance or independent verification of its sustainability disclosures?
86	Governance: ESG	Does the company disclose that its board has a formal schedule for consideration of environmental, health and safety, and social matters?
87	Governance: ESG	Does the company disclose the existence of a dedicated Environment, Corporate Social Responsibility, Health and Safety, or Sustainability committee?
88	Governance: ESG	Does the company disclose that its Environment, Corporate Social Responsibility, Health and Safety, or Sustainability committee has oversight of policies and operational controls of environmental, health and safety, and social risks?
89	Governance: ESG	Does the company's Environment, Corporate Social Responsibility, Health and Safety, or Sustainability committee report directly to the board of directors or is it chaired by a named board member?
90	Governance: ESG	According to company disclosure, how many times did the Environment, Corporate Social Responsibility, Health and Safety, or Sustainability committee meet in the most recent fiscal year?
91	Governance: ESG	Does the company disclose whether its Environment, Corporate Social Responsibility, Health and Safety, or Sustainability committee meetings in the most recent fiscal year were well attended?
92	Governance: ESG	Does the company disclose whether its environmental management system lead reports directly to the CEO or management board?
93	Governance: ESG	Does the compensation policy explicitly reference specific science-based targets for reducing GHG emissions with a reference to the 2°C scenario?
94	Governance: ESG	Does the company provide information indicating a link between consideration of ESG risks and performance, and executive remuneration?
95	Social: Community	Does the company disclose information about stakeholder engagements carried out during the past year?
96	Social: Community	Does the company disclose policies, programs and procedures for involuntary resettlement, including engagement processes and practices with affected communities, including any international standards used?
97	Social: Community	Does the company disclose policies, programs and procedures for land acquisition, including relationship with compulsory purchase / eminent domain when in the public interest?
98	Social: Community	Does the company disclose its social investment strategies, programs and procedures?
99	Social: Diversity & Inclusion	Does the company publicly disclose a gender diversity strategy or similar commitment to ensure appropriate gender representation at the board, senior management, or workforce levels?
100	Social: Diversity & Inclusion	Does the company apply a diversity strategy (beyond gender) to the board level?
101	Social: Diversity & Inclusion	Does the company's apply a diversity strategy (beyond gender) to the senior management level?
102	Social: Diversity & Inclusion	Does the company's apply a diversity strategy (beyond gender) to the workforce level?
103	Social: Human Rights	Does the company's human rights policy address the protection of minority groups' rights?
104	Social: Human Rights	Does the company's human rights policy address the protection of women's rights?
105	Social: Human Rights	Does the company indicate that it applies the same human rights policy standards to partners?
106	Social: Human Rights	Does the company indicate that it applies the same human rights policy standards to suppliers/vendors?

Item	Category	Question
107	Social: Human Rights	Does the company indicate that the company's human rights policy supports any specific recognized public convention? (E.g. UN Universal Declaration of Human Rights, OECD Guidelines for Multinational Enterprises, etc.)
108	Social: Human Rights	Does the company identify specific salient human rights risks in the most recent annual, integrated, or sustainability report?
109	Social: Human Rights	Does the company disclose strategies to prevent and mitigate identified risks?
110	Social: Human Rights	Is the company a Corporate Participant to the Voluntary Principles on Security and Human Rights (VPSHR)?
111	Social: Human Rights	Has the company published a conflict minerals report for the past fiscal year?
112	Social: Indigenous Peoples	Does the company disclose its impacts to Indigenous Peoples?
113	Social: Indigenous Peoples	Does the company disclose how it engages with Indigenous Peoples (e.g., seek a formal agreement or FPIC where needed and to address their grievances, concerns and expectations)?
114	Social: Labor, Health and Safety	Does the company disclose a policy that specifically addresses occupational health and safety?
115	Social: Labor, Health and Safety	Does the company's occupational health and safety policy explicitly encompass all facilities and operations?
116	Social: Labor, Health and Safety	Does the company's publicly disclosed occupational health and safety policy explicitly extend to suppliers?
117	Social: Labor, Health and Safety	Does the company disclose processes and programs for identifying and addressing significant workforce health issues at the local, regional and global level, together with any results and plans?
118	Social: Labor, Health and Safety	Does the company disclose its health measures to prevent, reduce and manage infectious diseases, both within the workforce and within the local community affected by your activities, including voluntary testing, treatment, counselling and return to work?
119	Social: Process Safety	Does the company disclose the number of Tier 1 process safety events reported separately for each major business activity, such as refining or upstream?
120	Social: Process Safety	Does the company disclose the number of Tier 2 process safety events reported separately for each major business activity, such as refining or upstream?
121	Social: Product Stewardship	Does the company disclose its approach to environmental management of products?
122	Social: Product Stewardship	Does the company disclose its approach to sustainable materials consumption, including approaches to reduce, reuse and recycle products, such as lubricants and plastics?
123	Social: Product Stewardship	Does the company disclose activities to engage suppliers, contractors, and downstream users on product stewardship? If so, please note these.
124	Social: Product Stewardship	Is the company a member of the Extractive Industries Transparency Initiative?
125	Social: Security & Risk Management	Does the company disclose its management approach to promoting resilience to cybersecurity threats or attacks?
126	Social: Stakeholders and Society	Is the company a participant to the UN Global Compact?
127	Social: Stakeholders and Society	Does the company publicly disclose a Code of Vendor Conduct?
128	Social: Stakeholders and Society	Does the company's publicly disclosed Code of Vendor Conduct address generic supply chain audits?
129	Social: Stakeholders and Society	Does the company disclose a formal system to implement stakeholder consultation and engagement?
130	Social: Stakeholders and Society	Does the company report on its progress towards UN Sustainable Development Goals?
131	Social: Transport Safety	Does the company disclose risk management approaches to transport safety?
132	Social: Workforce Non-retaliation & Grievance Mechanisms	Does the company's publicly disclosed Code of Vendor Conduct address freedom of association?
133	Social: Workforce Non-retaliation & Grievance Mechanisms	Does the company's publicly disclosed Code of Vendor Conduct address collective bargaining?
134	Social: Workforce Non-retaliation & Grievance Mechanisms	Does the company disclose an enterprise level workforce/labor rights policy?
135	Social: Workforce Non-retaliation & Grievance Mechanisms	Does the company indicate that it applies the same workforce policy standards to suppliers/vendors?

APPENDIX B

Greenhouse Gas Targets

Selected Companies for Literature Review		
Company	**By Year**	**GHG Reduction Targets**
Equinor	2025	- Upstream CO_2 intensity below 8 kg CO_2/boe.
	2026	- 4-6 GW installed capacity renewable energy, Equinor share.
	2030	- Carbon neutral global operations. - 40% absolute GHG reductions in Norway. - No routine flaring and near zero methane emissions.
	2035	- 12-16 GW installed capacity renewable energy, Equinor share.
	2040	- 70% absolute GHG reductions in Norway.
	2050	- At least 50% reduction of net carbon intensity. - Near zero absolute GHG emissions in Norway.
BP	2023	- Measurement at all BP's major oil and gas processing sites by 2023, transparent reporting and 50% reduction in BP's operated methane intensity.
	2050	- Net-zero across entire operations on an absolute basis. - Net-zero on an absolute basis from Upstream production. - 50% reduction in carbon intensity of the products BP sells.
Orsted	2023	- Phase out coal completely.
	2025	- Carbon neutral operations and energy generation.
	2030	- Build more than 30GW of green energy across technologies
	2032	- Reduce emissions from energy trading and in the supply chain (Scope 3 GHG emissions) by 50% compared to base year of 2018.
	2040	- Carbon neutral footprint a decade ahead of the 1.5^{o}C pathway by driving out remaining emissions from energy trading and from the supply chain.
Chevron	2023	4 goals established to reduce net GHG emissions by 2023 (based on 2016 emissions levels): - Lower oil net GHG intensity (5-10%) - Lower gas net GHG intensity (2-5%) - Lower flaring intensity (25-30%) - Lower methane emissions intensity (20-25%)
BHP	2022	- Maintain operational (Scope 1 and 2) GHG emissions at or below FY2017 levels while BHP continues to grow its business.
	2030	- Reduce operational GHG emissions (Scope 1 and Scope 2 from BHP's operated assets) by at least 30% from FY2020 levels by FY2030.
	2050	- Long-term goal is to achieve net-zero operational emissions by 2050.
ExxonMobil	2020	- Reduce methane emissions by 15% compared to 2016 levels. - Reduce flaring emissions by 25% compared to 2016 levels.
	2025	- 15-20% reduction in GHG intensity of upstream operations. The reductions will be supported by a 40-50% reduction in methane intensity and a 35-45% reduction in flaring intensity. Note: The 2025 emission reduction plans are expected to reduce absolute greenhouse gas emissions by an estimated 30% for the Company's upstream business. Similarly, absolute flaring and methane emissions are expected to decrease by 40 to 50%. The emission reduction plans cover Scope 1 and Scope 2 emissions from assets operated by the Company.
	2030	- Eliminate routine flaring in upstream operations.
Repsol	2025	- 10% reduction in Carbon Intensity Indicator. - Plan to reduce emissions by 3 MT CO_2e - 25% reduction in emission intensity of CH_4 and 50% reduction of the routine gas flaring in E&P. - Invest €2,500 M in low-carbon business. - 7.5 GW low-emission electricity generation capacity. - 5% share of electricity market and 15% share of gas market. - From 2025-2040: 40% reduction in Carbon Intensity Indicator; 20% recycled content in polyolefin
	2025-2040	- 40% reduction in Carbon Intensity Indicator. - 20% recycled content in polyolefins. - 600,000 t high-quality biofuels. - Zero routine flaring 2030. - Update CO_2 emission reduction targets. - Investment in low carbon businesses. - Increase in capacity to generate low-emissions electricity and electricity and gas market share.
	2040-2050	- Net-zero Emissions
Shell	2022	-- Net Carbon Footprint target for 2022 of 3-4% lower than 2016 Net Carbon Footprint of 79 grams of CO_2e per MJ.
	2050	- By 2050, Shell's ambition is to align its Net Carbon Footprint with the average footprint of the energy mix in the global energy system. Shell aims to reduce the Net Carbon Footprint of the energy products it sells – expressed in grams of carbon dioxide (CO_2) equivalent per megajoule consumed – by around 50% by 2050. As an interim step, by 2035, and predicated on societal progress, Shell aims for a reduction of around 20% compared with its 2016 level.
	2050	- Net-zero emissions energy business.

Selected Companies for Literature Review		
Company	**By Year**	**GHG Reduction Targets**
Total	2025	- Less than 40 Mt CO_2e target 2025 GHG emissions (Scope 1 + 2) on operated oil and gas facilities.
	2015-2030	- Total ambition is to reduce by 15% the average carbon intensity of energy products use by its customers between 2015 and 2030.
	2030	- Target of zero routine flaring by 2030.
	2040	- Reduce the carbon intensity of the energy products used by customers by 40% by 2040.
	2050	- Net Zero across Total's worldwide operations by 2050 or sooner (Scope 1+2). - Net Zero across all its production and energy products used by its customers in Europe by 2050 or sooner (Scope 1+2+3). - 60% or more reduction in the average carbon intensity of energy products used worldwide by Total customers by 2050, with intermediate steps of 15% by 2030 and 35% by 2040 (Scope 1+2+3).
Walmart	2040	- Targeting zero emissions across the company's global operations by 2040. Walmart aims to achieve this without carbon offset by: - Harvesting enough wind, solar and other energy sources to power its facilities with 100% renewable energy by 2035. - Electrifying and zeroing out emissions from all of its vehicles, including long-haul trucks by 2040. - Transitioning to low-impact refrigerants for cooling and electrified equipment for heating in its stores, clubs, data centers and distribution centers by 2040.
Johnson & Johnson	2025	- Source 100% of J&J's electricity needs from renewable sources.
	2030	- Achieve carbon neutrality for J&J's operations, going beyond its Science-Based Target to reduce absolute Scope 1 and 2 emissions 60% from 2016 levels. - By 2030, reduce absolute upstream Scope 3 emissions 20% from 2016 levels.

Other Companies	
Company Name	**Commitments**
American Airlines	Net zero by 2050.
Anglo American	Carbon neutral mining by 2040.
Apple	Net zero by 2030.
Arup	Net zero by 2030.
Avast Plc	Carbon neutral commitment and member of the Gold Standard Org (emissions offset program).
Aviva	Aviva sets new 2050 net-zero target for its own auto-enrolment default pension funds.
Barclays	Barclays announces ambition to be a net zero bank by 2050.
Barratt Developments plc	Announced science-based targets by committing to achieving net-zero greenhouse gas emissions by 2040.
Bolt	Climate positive by end of 2020.
British Airways	Net zero by 2050.
British Land Company Plc	Plans to achieve net zero carbon portfolio, including developments, by 2030.
BT Group	BT pledges to become a net-zero-carbon business by 2045.
BT Pension Scheme	Net zero by 2035.
Cathay Pacific	Net zero by 2050.
CMS	Net zero by 2025.
Coca-Cola HBC AG	Reduce direct carbon emissions ratio by 30% vs. 2017.
CRH	Become carbon neutral by 2050.
Croda International Plc	By 2050, achieve net zero scope 1 and 2 GHG emissions.
Diageo	Diageo Targets Zero Carbon Emissions By 2030.
DS Smith Plc	Targets 30% Reduction of Carbon Emissions by 2030 in Partnership with World Kinect Energy Services.
Experian	Become carbon neutral in its own operations by 2030.
EY	Carbon neutral by 2020.
Fiji Airways	Net zero by 2050.
Finnair	Carbon neutrality by 2045.
GlaxoSmithKline	GSK sets new environmental goals of net zero impact on climate and net positive impact on nature by 2030.
Glencore	Glencore announces its ambition to be a net-zero emissions company by 2050.
GVC Holdings PLC	Target to reduce greenhouse gas emissions by 15% over the period 2018 to 2021.
HMRC	Net zero by 2040.
IAG	Net zero carbon emissions by 2050.
Iberia	Net zero by 2050.
Ikea	Climate positive by 2030.
Informa plc	Reduce carbon and waste footprint with the aim of becoming a zero waste and net zero carbon business by 2030.
International Consolidated Airlines Group, S.A.	Achieve net-zero carbon dioxide (CO2) emissions by 2050.
ITV plc	Net Zero carbon emissions by 2030.
J Sainsbury plc	Net Zero Carbon Target.
Jacob’s Engineering	Net zero by 2030.
Japan Airlines	Net zero by 2050.
Johnson Matthey Plc	Committing to net zero targets by 2050.
LafargeHolcim	Net zero by 2050.
Land Securities Group plc	Committed to becoming a net zero carbon business by 2030.
Legal & General	Achieve net zero carbon emissions by 2050.
Lloyds Banking Group	Lloyds Banking Group to halve carbon emissions of investments by 2030.
London Stock Exchange	Becoming climate positive by 2025.
M&G plc	Commitment to achieve net zero carbon emissions on its total book of assets under management and administration by 2050.
Mace	Net zero carbon by 2020.
Malaysia Airlines	Net zero by 2050.
Microsoft	Net zero by 2030, with an additional goal of removing all carbon emitted since it was founded in 1975.
National Grid	National Grid Releases Net Zero by 2050 Plan.

Other Companies	
Company Name	**Commitments**
National Trust	Net zero emissions by 2030.
NatWest Group	Climate positive by 2025.
Nespresso	Carbon neutrality by 2022.
NEXT plc	Achieved a 35% reduction against new 2030 Scope 1 and Scope 2 carbon reduction targets.
NHS	Net zero by 2040.
Ocado Group	Net Zero carbon emissions by 2040.
Pennon Group Plc	Net Zero carbon emissions by 2030.
Phoenix Group Holdings plc	Commit to having a net zero carbon emissions operational footprint (Scope 1, 2 and selected Scope 3) by 2025.
Polymetal International plc	Work towards net zero emissions.
PwC	Net zero by 2030.
Qantas	Net zero by 2050.
Qatar Airways	Net zero by 2050.
RELX PLC	Become a zero carbon city by 2050.
Rentokil Initial	Through EV100 initiative, the businesses have committed to switching their transport fleets to electric models by 2030.
Rio Tinto	Rio Tinto announced plans to invest around $1 billion over the next five years to support the delivery of its new climate change targets and a company objective for net zero emissions from operations by 2050.
Rolls-Royce Group	Reach net zero carbon by 2050.
Royal Air Moroc	Net zero by 2050.
Royal Jordanian	Net zero by 2050.
RSA Insurance Group plc	Carbon reduction target: to reduce emissions by 50 per cent by 2030.
S7 Airlines	Net zero by 2050.
Schroders plc	Target to become a net-zero carbon business.
Sky	Net zero by 2030.
Spirax-Sarco	Net zero by 2040.
Sri Lankan Airlines	Net zero by 2050.
SSE	SSE has joined the Race to Zero campaign, making a commitment to reach net zero carbon emissions by 2050.
Standard Chartered	‘Net zero’ emissions from its operations by 2030.
Whitbread PLC	Aiming to reach net-zero carbon emissions for scope 1 and 2 by 2050.
Wm Morrison Supermarkets PLC	Net zero by 2040.
WPP Group	Committing to 100% renewable energy and net zero (Scope 1 and 2) carbon emission WPP campuses by 2025.