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Emissions Reporting of International Oil Companies

Energy Research Paper

The Al-Attiyah Foundation

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The oil and gas industry, a major contributor to global greenhouse gas (GHG) emissions, faces increasing pressure from environmental, social, and governance (ESG) factors influencing investment decisions. Despite the uncertainty of its future in the energy transition context, demand for oil and gas is not expected to diminish in the near-term. However, to secure capital from ESG-focussed investors, oil & gas companies must demonstrate their efforts to reduce their environmental impact.

What is the outlook for emissions accounting and disclosures for IOCs? What are the similarities and differences in disclosures and reporting? How will new regulatory developments in the United States and Europe impact emissions accounting and reporting protocols?

ENERGY RESEARCH PAPER

This research paper is part of a 12-month series published by the Al-Attiyah Foundation every year. Each in-depth research paper focuses on a current energy topic that is of interest to the Foundation's members and partners. The 12 technical papers are distributed to members, partners, and universities, as well as made available on the Foundation's website.

Introduction

- IOCs[1] employ different methods and definitions, and the lack of standardisation in emissions accounting practices and reporting does not allow for a meaningful assessment for ESG-focussed investors.
- Despite the divergences in GHG emissions accounting, the most followed accounting standard currently used by all major IOCs is the GHG Protocol, and their emissions metrics are disclosed and reported based on the Task Force on Climate-related Financial Disclosures Framework (TCFD).
- These IOCs also participate in voluntary initiatives such as Methane Guiding Principles, Aiming for Zero Methane Emissions Initiative, and the Oil & Gas Methane Partnership Reporting Framework to reduce methane emissions from oil & gas operations.

Similarities and Differences in Emissions Disclosures and Reporting

- All major IOCs have outlined some form of quantitative, medium-to-long-term, intensity-based, and / or absolute Scope 1 – 3 emissions reduction targets that are expected to materialise between 2030 – 2050.
- The carbon intensity of all major IOCs varies modestly between TotalEnergies' 67 gCO_2-eq / MJ to BP's 71.5 gCO_2-eq / MJ, mainly attributed to varying proportions of high-carbon and low-carbon commodities in overall energy sales mixes, inconsistent disclosures relating to trading operations and sales of renewable energy, and uneven accounting on sales destined for non-energy uses.

1.Throughout this paper the term "major IOCs" and "IOCs" refers to ExxonMobil, Chevron, Shell, BP, TotalEnergies, Eni, and Equinor. This is distinct from national oil companies (NOCs) as well as smaller, mostly domestically-focussed non-state oil companies.

- Current Scope 1 and 2 carbon intensity pathways of IOCs such as Shell, BP, TotalEnergies, and Eni would see them align with the Paris Climate Agreement's 1.5oC target by 2047, in contrast to ExxonMobil and Chevron that are far out of alignment.

Regulatory Developments in the United States and Europe and their Impact on Emissions Disclosures and Reporting

- The United States Securities and Exchange Commission's recently proposed rule changes require all publicly listed IOCs (including IOCs operating in non-American jurisdictions that are listed on American exchanges) to disclose their GHG emissions, climate-related and transition risks, and their strategy to mitigate them in line with the Task Force on Climate-related Financial Disclosures Framework's recommendations by 2024.
- Given the seaborne liquified natural gas trade growth to Europe, implementing the European Sustainability Reporting Standards under the Corporate Sustainability Reporting Directive could lead to a "Brussels Effect" extending beyond the European border.

Implications

- To strengthen their ESG performance and expand the pool of capital-raising options, European IOCs need to develop their disclosure of carbon offsets and the role of CCUS, and American IOCs need to expand on their short-term emissions targets and their intended shift to low-carbon energy supplies in the medium-term.
- All IOCs can improve their emissions performance by strengthening their emissions reduction commitments and improve their emissions disclosure by continuing to provide standardised and comparable disclosures, aligning their short-term targets and remuneration with long-term climate ambitions, and incorporating a supply chain-based approach by enhancing their Scope 3 emissions targets.

Environmental, social, and governance (ESG) metrics and targets have become central to many investment strategies in the last decade. This coincides with increased pressure for climate action after the ratification of the Paris Climate Agreement. Investors are now scrutinising operational indicators to assess the emissions reduction performances of international oil companies (IOCs), who in response, are prioritising emissions management and disclosing global greenhouse gas (GHG) emissions metrics as part of their ESG strategies.

The primary purpose of including performance indicators, such as emission intensity, in corporate reporting, is to assist stakeholders in assessing a company's overall exposure to climate-related risks, in addition, to demonstrating adaptive strategies to address these risks and informing comparative assessments of regulatory and reputational risks. However, emissions data is only meaningful if comparable metrics are used.

IOCs employ different methods and definitions, and the lack of standardisation in emissions accounting practices and reporting does not allow for a meaningful assessment for ESG investors.

Common divergences in emissions reporting among IOCs relate to system boundaries, units of measurement, and emissions ownership.

IOCs use a variety of boundaries to report upstream emission intensities, with the disclosure of direct (Scope 1) and indirect (Scope 2) emissions evident to varying degrees. The definition of upstream activities is also rarely specified in the company reporting, which makes it impossible to distinguish which specific activities are included in emission estimation and / or reporting.

Scope 3 (supply-chain) emissions are even more complex, given that oil companies do not have control over how their products are used once sold, and not all uses result in emissions. Scope 3 has substantial and duplication: for example, consider a cubic metre of gas sold to a power plant (Scope 3) which then burns it to generate electricity (Scope 1) and sells the power to another oil company (Scope 2). An oil company may buy crude for refining, and may trade crude, natural gas, or refined products – indeed, several companies may trade the same barrel, multiplying the apparent "Scope 3" when-added between them.

What are Scope 1, 2, 3, and 4 emissions?

Scope 1: direct emissions from operations, typically oil & gas combustion and methane leakage.

Scope 2: indirect emissions from the purchase of electricity or heat.

Scope 3: supply-chain emissions, typically for oil companies resulting from combustion of their products by third parties.

Scope 4: avoided emissions by use of the company's products.

Finally, "Scope 4" is a term not yet generally accepted but refers to avoided emissions by using a company's products when they are lower carbon than an alternative[i].

The calculation of emissions can be based on various units, each equally valid, but still complicating ESG comparisons. Examples of such units of measurement include kilograms of carbon dioxide equivalent ($kgCO_2$-eq) / barrel of oil, kilograms of carbon dioxide equivalent / barrel of refined product, and grams of carbon dioxide equivalent (gCO_2-eq) / megajoule (MJ).

Similarly, companies are also making different choices around Global Warming Potential (GWP) values. This is because the GWP of GHG emissions is not a constant measurement unit but rather a dynamic one, which depends on the emission type (carbon dioxide, methane, nitrous oxide, etc.) reported and the period over which its effects are considered. Calculations of GWP vary with new scientific information, including the indirect effect of atmospheric reactions; for example, the 100-year GWP of methane is variously given as 27-34[ii], and has steadily increased from the IPCC's second assessment report to its fifth[iii]. The 20-year GWP of methane is 81-83.

Measurement of methane emissions has also been heavily criticised recently. Satellite measurements show significantly higher methane intensity over producing basins than that reported by companies operating there. This may at least be due to most leaks coming from "super-emitters" or process interruptions that are not captured by routine measurements.

Exxon Mobil has been using aeroplanes equipped with infrared cameras to detect methane leaks for several years, but the data from flights is imperfect.

Drones produced by American Robotics with infrared cameras have found unlit flares emitting methane across various basins in the United States. These drones can make several trips each day to check oil wells or storage tanks, but they're not widely deployed.

However, there are limitations to infrared cameras used on satellites, drones, and planes. Infrared cameras use the sun's rays, so they can't detect methane at night or on cloudy days. They have not been able to image offshore methane releases, although new techniques now permit this. And they provide only a snapshot in time. So it can be hard to determine how much methane escaped before a leak was detected.

Therefore, any agreement on what equipment would be acceptable to measure methane and how it should be used will require a rigorous process involving industry, government and environmental scientists.

Currently, major sources of methane from human activities include oil & gas production, agriculture, and waste management. ~18% of global methane emissions come from decaying solid waste in landfills, with China, India, and the United States as the top emitters in the waste sector[iv]. So oil and gas-related methane emissions can be confused with those from other sources, though satellite monitoring is increasingly precise and able to tie down point releases.

IOCs typically report on either operated or equity-based information when disclosing GHG emissions. The approach best suited to IOCs is based on the nature of its business activities and the corporate entity's complex ownership structure, ultimately impacting how an IOC reports its GHG emissions intensity.

Given these divergences in methodologies and definitions companies use to report their emissions metrics, comparing GHG emissions intensities can lead to incorrect conclusions. The lack of standardisation in emissions accounting practices and reporting prevents a meaningful peer comparison. As a result, ESG investors interested / involved in the oil & gas industry cannot make reliable "apples-to-apples" comparisons between companies.

Despite the divergences in GHG emissions accounting, the most followed accounting standard currently used by all IOCs is the GHG Protocol, and their emissions metrics are reported based on the Task Force on Climate -related Financial Disclosures Framework (TCFD).

The GHG Protocol provides a voluntary standardised framework for measuring and managing GHG emissions in the oil & gas industry through a six-step process that involves 1) estimating the volume of fossil fuel sales, 2) accounting for long-term storage of carbon in non-fuel products, 3) accounting for non-sales quantities used internally as fuel, 4) accounting for losses of non-sales quantities from flaring, venting, and fugitive sources, 5) calculating emissions from fossil fuel combustion and leakage, and 6) accounting for CO_2 used in enhanced oil recovery (EOR) and CO_2 sequestration projects.

The emissions accounting conducted through the GHG Protocol Standards is typically reported through the TCFD framework, a set of guidelines for IOCs to disclose climate-related risks and opportunities and their potential financial impacts to investors and other stakeholders.

Reporting emissions according to the TCFD framework ensures a consistent reporting of material and relevant information on their adaptive measures relating to different climate change scenarios, maintaining, and growing financial performance and position, making climate-informed strategic decisions, managing climate-related risks and opportunities, and establishing and tracking climate-related metrics and targets.

In addition, to the TCFD reporting framework, and among many others, all major IOCs adhere to other sustainability reporting standards such as the Sustainability Accounting Standards Board (SASB) and the International Petroleum Industry Environmental Conservation Association (IPIECA).

IOCs are also participating in voluntary initiatives such as the World Bank's Zero Routine Flaring by 2030, Oil & Gas Climate Initiative's Aiming for Zero Methane Emissions, Methane Guiding Principles, and Oil & Gas Methane Partnership Reporting Framework to reduce methane emissions from oil & gas operations.

Figure 1: Core Elements of TCFD Framework

Governance

The organisation's governance around climate-related risks and opportunities

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning

Risk Management

The processes used by the organisation to identify, assess, and manage climate-related risks

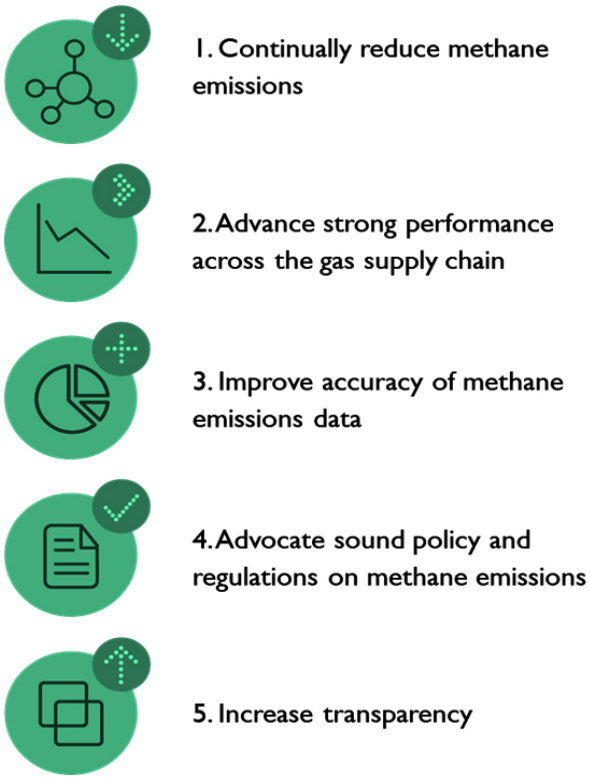
Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

All leading IOCs have endorsed the World Bank's Zero Routine Flaring by 2030 initiative. This initiative requires companies to develop plans to use or conserve all associated natural gas without non-emergency flaring on new upstream projects and eliminate non-emergency flaring by 2030 for existing upstream projects.

The Methane Guiding Principles (MGP) is a voluntary, international, multi-stakeholder partnership between industry and non-industry organisations, of which all main IOCs are members. MGP focuses on priority areas for methane reduction action across the natural gas supply chain. It has published best practice guides for IOCs on flaring, equipment leaks, venting, pneumatic devices, operational repairs, engineering design, and construction[v].

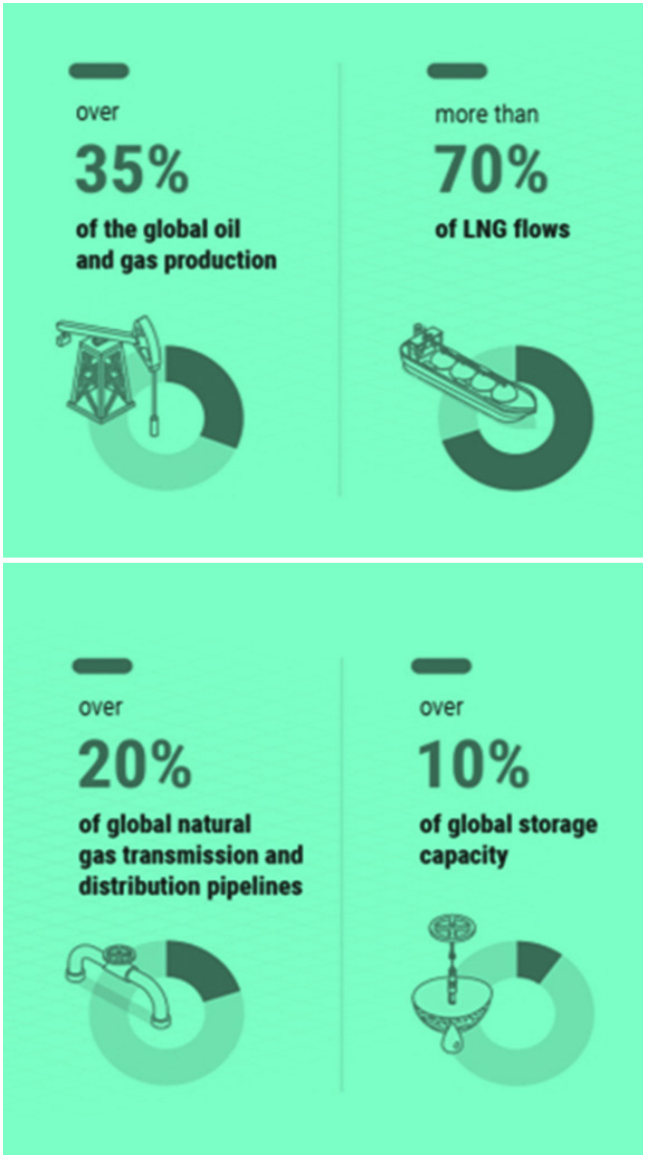
Figure 2: Methane Guiding Principles Best Practices



The MGP also provides toolkits for IOCs, such as the Gap Assessment Tool, which enables them to carry out a self-assessment of the completeness and maturity of their existing methane management arrangements based on a simple scoring system, and the Methane Cost Model, which provides users with a screening tool to support the identification and evaluation of potential methane reduction projects across the natural gas supply chain[vi].

Moreover, the Oil & Gas Methane Partnership (or OGMP 2.0) is a voluntary initiative to improve the accuracy and transparency of anthropogenic methane emissions in the oil & gas industry. OGMP has issued a series of technical guidance documents on the quantification and mitigation options for methane emissions from upstream oil & gas operations[vii].

Figure 3: OGMP 2.0 Member Companies Represent…



Only Shell, BP, TotalEnergies, and Equinor of the main IOCs are partnership members. Through the OGMP Reporting Framework, IOCs report their methane across the entire natural gas value chain and non-operated scope, report a breakdown of methane emissions by source, provide information on inventory methodologies, and use of airborne measurement campaigns[viii].

OGCI Members

IOCs: Shell, ExxonMobil, bp, Chevron, TotalEnergies, Eni, Repsol, Occidental

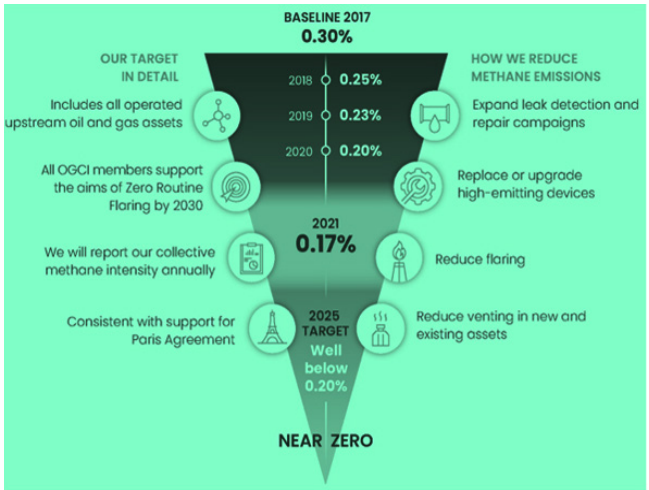
Internationalised NOCs (INOCs): Equinor, CNPC

NOCs: Saudi Aramco, Petrobras

In 2022, the Oil & Gas Climate Initiative (OGCI) launched the Aiming for Zero Methane Emissions initiative to achieve near-zero methane emissions from operated oil & gas assets by 2030. All major IOCs have joined the industry, set various (absolute and intensity-based) methane reduction targets, and report their progress annually.

The OGCI member companies represent ~30% of global operated oil & gas production and have set a target to reduce the collective average methane intensity target of their aggregated upstream operations to <0.2% by 2025, aiming to reach 0.20% over the same timeframe[ix]. OGCI also provides technical assistance and resources to help companies reduce their methane emissions.

Figure 4: OGCI's 2025 Methane Intensity Ambition



This OGCI initiative is meant to supplement important multistakeholder initiatives, such as the MGP and OGMP 2.0, and does not aim to duplicate their work. It also provides technical assistance and resources on best practices, reporting frameworks, and technology compendiums to support companies.

Overall, an IOC's choice of emissions accounting standard and reporting standard is dependent on the protocol's alignment with the company's sustainability goals and objectives, in addition to its comprehensiveness and relevance to its operations, its practicability in measurement, its compatibility with other industry-wide other protocols, and its ability to provide transparency, accountability, credibility, and recognition to the IOC's stakeholders and investors.

11 SIMILARITIES AND DIFFERENCES IN EMISSIONS DISCLOSURES AND REPORTING

All major IOCs have outlined some form of quantitative, medium-to-long-term, intensity-based and / or absolute Scope 1 – 3 emissions reduction targets that are expected to materialise between 2030 – 2050.

Figure 5: Climate and Emissions Commitments of IOCs

	ExxonMobil	Chevron
Climate Goal	Net-zero from operated assets by 2050. The company endorses a carbon tax to reduce hydrocarbon use and Scope 3 emissions.	Net-zero in Scope 1 and 2 emissions from its operations by 2050.
Scope 1 Target	2050	2050
Scope 2 Target		
Scope 3 Target	-	-
Interim Goal	Reduce Scope 1 and 2 emissions from the Permian Basin operations to net-zero by 2030.	Targets a more-than-5% reduction in carbon intensity across all three scopes by 2028.

	BP	Shell
Climate Goal	Net-zero across its operations, oil & gas production, and sales by 2050 or sooner. It plans to achieve this through a combination of emissions abatement, portfolio management, and increased investments in renewables.	Net-zero emission energy business by 2050
Scope 1 Target	2050	2050
Scope 2 Target		
Scope 3 Target		
Interim Goal	Reduce operational emissions by 50% by 2030. It seeks net-zero lifecycle emissions from its sold products by 2050 or sooner. Reduce methane emissions by 50% by installing measuring equipment across all major sites by 2023 and	Shell targets a 50% reduction in absolute Scope 1 and 2 emissions by 2030 and plans to reduce Scope 3 carbon intensity of sold products by 20% by 2030, 45% by 2035, and 100% by 2050.

	TotalEnergies	Eni
Climate Goal	Aims to achieve net-zero across its Scope 1 – 3 emissions by 2050	Net-zero emissions across the board, aiming for net-zero Scope 1 and 2 emissions by 2035.
Scope 1 Target	2050	2035
Scope 2 Target		
Scope 3 Target		2050
Interim Goal	Plans to reduce Scope 1 and 2 emissions by 40% by 2030, Scope 3 emissions from sales of its products in 2030 by more than 30% from 2015	The company plans to end routine flaring by 2025. The company plans to increase CCUS use to 50 MT / year by 2050 and boost natural

	Equinor
Climate Goal	Net-zero emissions by 2050
Scope 1 Target	2050
Scope 2 Target	
Scope 3 Target	
Interim Goal	Equinor plans to cut its Scope 1 and 2 emissions by 50% by 2030. The company aims to reduce net carbon intensity, including emissions from the use of sold products, by 20% by 2030 and 40% by 2035.

There is a clear distinction between the European and American IOC and their emissions reduction targets. All European IOCs (except Eni) have announced net-zero ambitions and Scope 1 – 2 emissions reduction targets that mature in 2050.

Whereas Eni has opted for a target of net-zero ambitions for Scope 1 and 2 emissions that materialises in 2035.

ExxonMobil and Chevron have also announced their 2050 net-zero ambitions, with the latter aiming for net-zero Scope 1 and 2 emissions by 2050. However, both companies have not set

Scope 3 emissions reduction targets. ExxonMobil believes that given its expanding LNG business, a long-term Scope 3 emissions target would contradict the global trend of coal-to-natural gas fuel switching in the global electricity mix[x].

In addition to net-zero 2050 ambitions, there is a clear distinction between IOCs and their medium-term Scope 1 and 2 emissions targeting, with some announcing absolute targets and others intensity-based. Shell, BP, TotalEnergies, and Equinor use an absolute targeting approach as they look to reduce Scope 1 and 2 emissions by 40% - 50% by 2030.

In contrast to the European IOCs, ExxonMobil and Chevron have set intensity-based medium-term Scope 1 and 2 emissions targets. The former plans to reduce Scope 1 and 2 emissions from its Permian Basin (which accounts for 40% of its production) to net-zero by 2030, whereas the latter is targeting a >5% reduction in Scope 1 – 3 emissions by 2028[xi]. These intensity-based targets fail to embrace the current carbon budget fully, allowing them space to expand oil & gas production.

In terms of Scope 3 emissions targets, Shell and Equinor have announced intensity-based targets, and TotalEnergies uses an absolute approach. Eni currently does not have a Scope 3 emissions target.

Shell and Equinor aim to reduce the Scope 3 carbon-intensity of their products sold by 20% by 2030. TotalEnergies aims to reduce its Scope 3 emissions from the sale of its petroleum products by 30% in 2030, from 2015 levels. And BP has pledged a net-zero for Scope 3 emissions by 2050[xii].

The carbon intensity of all major IOCs varies modestly between TotalEnergies' 67 gCO_2-eq / MJ to BP's 71.5 gCO_2-eq / MJ, mainly attributed to varying proportions of high-carbon and low-carbon commodities in their total share

of energy delivered, and the inconsistent disclosures relating to trading operations and sales of renewable energy, and uneven accounting on sales destined for non-energy uses.

Figure 6: Current Carbon Intensity Levels of IOCs against the Paris

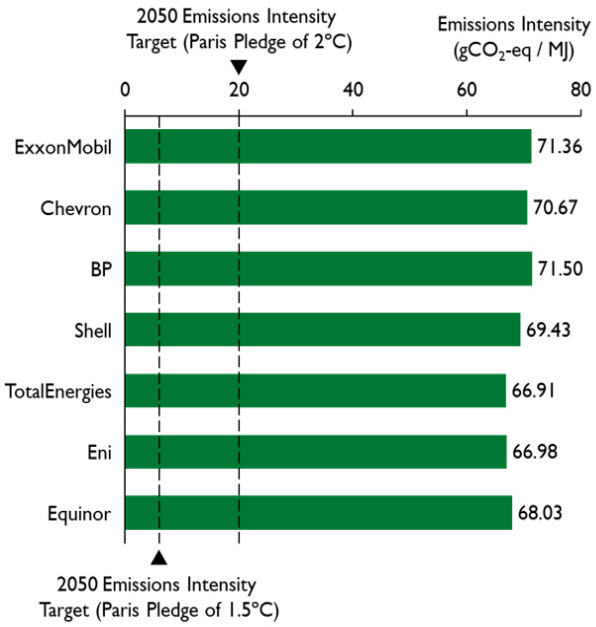
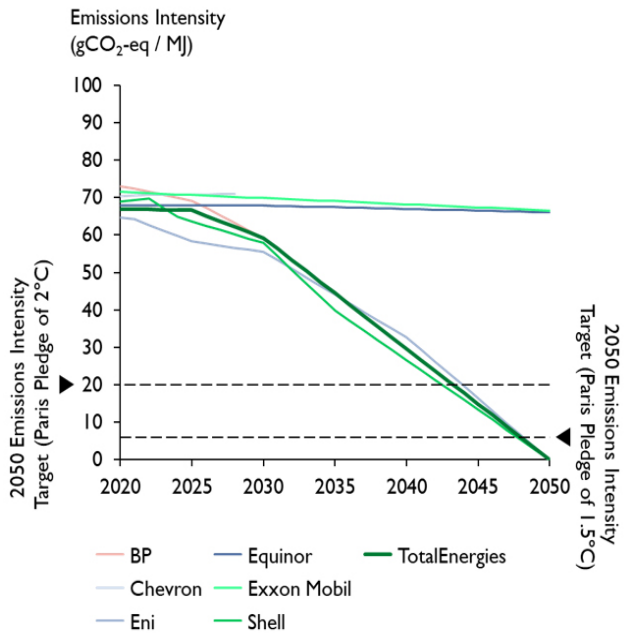


Figure 7: Projected Carbon Intensity Levels of IOCs[xv]



The least carbon-intensive company is TotalEnergies, but at 67 gCO_2-eq / MJ, its carbon intensity is still 11% above the current emissions intensity pathway to the Paris Pledge of 2oC[xiii]. The most carbon-intensive IOC is BP, with a carbon intensity level of 71.5 gCO_2-eq / MJ, which is 18% above the current emissions intensity pathway to the Paris Pledge of 2oC and 21% above 1.5oC[xiv].

Figure 8: Operated and Equity-adjusted Emissions Disclosed by IOCs

2022 Figures (in million metric tonnes of CO_2 equivalent)	BP	Shell	TotalEnergies	Eni	Equinor
Operated: Scope 1 Emissions	30	51	37	39	11
Operated: Scope 2 Emissions	1.5	7	2	1	reported, but 0 for the year
Equity: Scope 1 Emissions	34	-	51	30	-
Equity: Scope 2 Emissions	2	-	5	1	-
Scope 3 Emissions, Production	307	-	-	-	-
Scope 3 Emissions, Refining	-	-	-	-	-
Scope 3 Emissions, Supply Chain	1,334	1,174	400	164	243

2022 Figures (in million metric tonnes of CO_2 equivalent)	ExxonMobil	Chevron
Operated: Scope 1 Emissions	96	53
Operated: Scope 2 Emissions	7	1
Equity: Scope 1 Emissions	110	53
Equity: Scope 2 Emissions	7	4
Scope 3 Emissions, Production	540	391
Scope 3 Emissions, Refining	640	391
Scope 3 Emissions, Supply Chain	720	668

Current carbon intensity pathways of IOCs such as Shell, BP, TotalEnergies, and Eni would see them align with the Paris Climate

Agreement's 1.5oC target by 2047, in contrast to ExxonMobil, Chevron, and Equinor that are far out of alignment.

Nonetheless, the fact that all IOCs assessed are above the Paris Agreement benchmark, unsurprisingly reflects the dominance of high-carbon commodities in the total share of energy delivered, and specifically within the high-carbon commodities mix, varying proportions of natural gas; different levels of mature and heavy oil-field operations; and varying levels of Scope 1 and 2 emissions from their upstream, midstream, and downstream processes as a result of combustion, flaring, venting, and other fugitive sources.

TotalEnergies' low emissions intensity reflects a high proportion of natural gas in its total share of energy delivered, at 48%[xvi]. In comparison, BP's high emissions intensity is due to the high ratio of refined petroleum products, which accounts for 46% of the total share of energy delivered[xvii].

Other reasons behind varying emissions intensity levels are the inconsistent disclosure of trading operations. BP and Shell disclose large quantities of traded products. Without the full disclosure / breakdown of their trading operations, the proportion of petroleum products in the total share of energy delivered is lowered, effectively reducing emissions intensity.

Sales from low-carbon energy sources such as renewables generation are also inconsistently disclosed by European IOCs, that often only disclose nameplate generation capacities instead of the volume of electricity sales.

Also, none of the IOCs explicitly disclose the total share of energy delivered destined for non-energy uses, particularly in the case of petrochemicals and chemicals, and when they do, it is difficult to assess their overall energy content.

The companies that report supply-chain Scope 3 emissions have made assumptions to derive these figures. In future, an increasing amount of natural gas will be used with carbon capture, use and storage (CCUS), again requiring assessment of the activities of end-users.

All European IOCs have set Scope 3 emissions reduction targets and disclose them in their annual sustainability reporting. However, given the lack of a global standard to track Scope 3 emissions, it is difficult to compare their implementation of CCUS technologies and their purchases of carbon offsets.

The IOCs assessed are setting an exemplary precedent on emissions disclosure and reporting for the global oil & gas value chain and addressing these issues will have a significant impact on their future emissions intensity pathways. Restating them on an equity-share basis that is aligned with their Scope 3 emissions calculation, could also have a significant impact on their overall intensity disclosures.

REGULATORY DEVELOPMENTS IN THE UNITED STATES AND EUROPE AND THEIR IMPACT ON EMISSIONS DISCLOSURES AND REPORTING

The United States Securities and Exchange Commission's (SEC) recently proposed rule changes require all publicly listed IOCs (including IOCs operating in non-American jurisdictions that are listed on American exchanges) to disclose their GHG emissions, climate-related and transition risks, and their strategy to mitigate them in line with the TCFD's recommendations by 2024[xviii].

The proposed rule will require IOCs to report audited Scope 1 and 2 GHG emissions, and it will also require Scope 3 disclosures if the filing company has a Scope 3 target[xix]. The emissions reporting must be absolute and comparative, such as GHG per US$ of oil, natural gas, or petroleum products sales, as well as per mass, volume, or energy unit.

IOCs will need to disclose risks from physical climate-related hazards, such as fires or floods, by location and share of exposed assets[xx].

They will also need to disclose transition risks, which could be regulatory, technological, market, or reputational in the short, medium, and long-term.

Moreover, companies will need to disclose strategies to achieve their sustainability targets, including specific information on using carbon offsets and renewable energy certificates (RECs)[xxi]. If an IOC uses an internal carbon price, details on how it's computed and what it covers must be disclosed. Carbon offsets have come under heavy criticism recently, with the CEO of the largest certifier of carbon credits, Verra, to step down, after allegations that millions of tonnes of worthless offsets were approved[xxii]. The verifiability, permanence, and additionality of bio-based offsets, such as reforestation / avoided deforestation and soil carbon, are questionable.

Carbon dioxide removal (CDR) credits, based on the physical removal of atmospheric CO_2 by methods such as direct air capture (DAC), are much more robust but also expensive.

Ultimately, the proposed rule changes will help investors and stakeholders understand how a company's climate strategy correlates with its equity value creation story. However, on the downside, IOCs, such as ExxonMobil and Chevron, with a large conventional fossil fuels portfolio, could face higher costs of capital, which may impact their market capitalisation in the long-term if perceived as "less green" than their peers by ESG investors. Conversely, they can gain market capitalisation by repositioning / expanding their operational portfolios with low-carbon, high-growth assets such as renewables and hydrogen.

Given the growth of seaborne liquified natural gas (LNG) trade to Europe, the implementation of the European Sustainability Reporting Standards (ESRS) under the Corporate Sustainability Reporting Directive (CSRD) could lead to a "Brussels Effect" that extends beyond the European border.

The ESRS is expected to be implemented in 2024[xxiii]. As per the draft guidelines, publicly listed companies in the European Union (EU), subsidiaries of non-EU parent companies, and non-EU companies with a revenue ≥ EUR 150 million will have to provide sustainability reporting on their strategies, business models, policies, targets, and performance measurement metrics, and how those impact their respective ESG performance[xxiv xxv].

The ESRS (if implemented) will complement the European Union's Carbon Border Adjustment Mechanism (CBAM), which is a carbon tariff imposed on carbon-intensive products imported into the bloc, including electricity and hydrogen, though not yet oil or gas.

From January 1st, 2026, CBAM will enter into its permanent phase, and importers will need to disclose and pay for their annual emissions embedded in their goods using CBAM certificates.

The ESRS will also complement the relevant part of the EU's Climate Strategy – the European Taxonomy Regulation (ETR), which is a classification system defining environmentally sustainable activities and financial instruments. The ETR aims to provide clarity to investors, financial institutions, companies, and issuers and ultimately drive investment toward more sustainable assets.

The impact of the ESRS and the ETR is likely to extend beyond the European borders; for example, non-European IOCs and NOCs that trade with the bloc may apply the ESRS to reduce the burden of their reporting and align with EU ESG regulations to attract capital from European capital markets. However, it is too early to say how the ESRS aligns with the SEC's proposed rule changes and proposed standards in other jurisdictions.

Nevertheless, EU policymakers will likely introduce measures that will substantially impact LNG imports, including those from the United States. Policymakers are aware that Europe's position as a major natural gas import market gives them substantial leverage, evidenced by some IOCs, such as Cheniere, which is actively engaging in policy discussions with European policymakers over possible future regulations.

17 IMPLICATIONS

In order to build further confidence in both the credibility of their ambitions and their ability to decarbonise their operations, IOCs will need to provide additional disclosures. Eni's decarbonisation target currently sets the standard by including all its energy products, combining both absolute and intensity-based metrics, and providing guidance on all the main levers it can use to deliver its target of net-zero ambitions for Scope 1 and 2 emissions by 2035.

Shell's announcement that it will work with the supply chain in hard-to-decarbonise industries, such as aviation and maritime shipping, is also innovative, but further details will be needed to understand how the benefits of this approach can be quantified[xxviii].

As oil prices plunge and concerns about climate change increase, European IOCs are increasingly transitioning towards a "low-carbon leader" portfolio strategy as they pivot towards a carbon-neutral future and expand investments in renewables, the electricity supply chain from generation to transmission, and new energy fuels and technologies such as biofuels, hydrogen, and electric vehicles.

In contrast, American IOCs, such as ExxonMobil and Chevron, are betting on a long-term future for fossil fuels and are following an "energy major" portfolio strategy, which involves balancing their focus on fossil fuel production and LNG exports, while also deploying CCUS and efficiency improvement technologies to cut their scope 1 and 2 emissions.

This disparity reflects the vast differences in how European and American IOCs and their respective political systems approach climate change.

In order to strengthen their ESG performance and expand the pool of capital-raising options, European IOCs need to develop their disclosure of carbon offsets and the role of CCUS; and American IOCs need to expand on their short-term emissions targets and their intended shift to low-carbon energy supplies in the medium-term.

Eni's emissions target shows how much it intends to rely on offsets and CCUS. The company plans to increase CCUS use to 50 MT / year by 2050 and boost natural carbon removal solutions to 25 MT / year by 2050, with interim carbon targets in 2030 and 2040. Eni's operated Scope 1 emissions in 2022 were 39.4 $MtCO_2e$, Scope 2 0.79 Mt, and Scope 3 178.9 Mt[xxix].

Other European IOCs can announce similar guidance on carbon offsets and CCUS. In particular, European IOCs need to provide reassurance that their carbon offset purchases are genuinely contributing to reducing emissions and that they have appropriately quantified the expected financial cost.

The supply of credible voluntary offsets will also need to increase significantly to meet incremental demand from the oil & gas industry.

ExxonMobil and Chevron lag behind their European peers in expanding their low-carbon energy supply business, despite setting long-term emissions intensity targets. They continue to invest mainly in CCUS and efficiency improvements to reduce their Scope 1 and 2 emissions. They are also keeping up with shale oil & gas drilling and expanding their natural gas and LNG businesses.

All IOCs can improve their emissions performance by strengthening their emissions reduction commitments and improve their emissions disclosure by continuing to provide standardised and comparable disclosures, aligning their short-term targets and remuneration with long-term climate ambitions, and incorporating a supply chain-based approach by enhancing their Scope 3 emissions targets.

For the average IOC, current emissions intensity would need to be reduced by ~13% to align with a 2oC Paris Climate pathway by 2050. And an alignment with a 1.5oC Paris Climate pathway will require ~20% average reduction in current emissions intensity levels.

All IOCs disclose their targets and emissions differently, challenging comparing commitments and performances. ESG investors continue to press for a standardised approach to disclosures so that they can consistently evaluate and compare the transition strategies of IOCs with their global peers.

Companies with high Management Quality tend to have more significant commitments to reduce emissions. To ensure that management actions align with long-term sustainability targets, short-term targets should link to executive remuneration and match long-term climate ambitions. In 2021, Shell linked the pay of more than 16,500 its staff member to, its target to reduce the carbon intensity of its energy products by 6-8% by 2023, compared with 2016 levels[xxx].

A clear, viable path to cut emissions is currently lacking for industries like aviation and maritime shipping, which makes them particularly challenging to decarbonise. IOCs can follow Shell's example and outline how they will work with their customers, supply chains, and other stakeholders to decarbonise these industries.

The oil & gas industry is a major contributor to GHG emissions and faces increasing pressure from ESG investors to reduce its environmental impact. While demand for fossil fuels is not expected to diminish in the near-term, it faces strong medium- and long-term pressure. Companies with a lower upstream carbon intensity should see their barrels relatively advantaged. Oil & gas companies must demonstrate their efforts to reduce their environmental impact and report progress transparently and in a standardised manner to secure capital from ESG-focused investors.

IOCs are stepping-up to today's multi-faceted challenges, integrating ESG into their businesses to comply with changing regulations, secure capital during fundraising, identify and manage risks during operations and capitalise on new opportunities.

The establishment of accounting standards and reporting guidelines such as the GHG Protocol, the TCFD Reporting Framework, Methane Guiding Principles, the Oil & Gas Methane Partnership, the new proposed rule changes by the US SEC, and the European Sustainability Reporting Standards are prime examples of how ESG will influence capital raising and emissions reporting and provide a guidepost for the development of programs and benchmarking against other companies.

As new standards are released and older ones are updated, IOCs increasingly need to provide verified data representing actual ground operations. Reports will be audited against measured findings from the field or site by third parties to ensure accuracy and validity.

Conversely, the investment community has responded and addressed its role in the net-zero transition with more robust checks and measures of oil & gas projects and companies. And they will continue to enforce international best practice standards for ESG.

APPENDIX

i. Financial Times, https://enterprise.ft.com/en-gb/blog/measuring-scope-4-emissions-what-boards-need-to-know/
ii. US Environmental Protection Agency, https://www.epa.gov/ghgemissions/understanding-global-warming-potentials; https://clear.ucdavis.edu/explainers/gwp-star-better-way-measuring-methane-and-how-it-impacts-global-temperatures
iii. Greenhouse Gas Protocol (https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf)
iv. Tracking methane from space could be key to helping slow global warming, Axios, 2022 (http://axios.com/2022/11/10/tracking-methane-space-climate-chang)
v. Best Practice Guides, Methane Guiding Principles (https://methaneguidingprinciples.org/resources-and-guides/best-practice-guides/)
vi. Toolkits, Methane Guiding Principles (https://methaneguidingprinciples.org/resources-and-guides/toolkits/)
vii. Toolkits, Methane Guiding Principles (https://methaneguidingprinciples.org/resources-and-guides/toolkits/)
viii. A solution to the methane challenge, OGMP (https://ogmpartnership.com/a-solution-to-the-methane-challenge/)
ix. Oil & Gas Climate Initiative Reporting Framework, OGCI, 2020 (https://www.ogci.com/wp-content/uploads/2020/10/OGCI-Reporting-Framework-3.3-October-2020.pdf)
x. Scope 3 target would boost emissions: ExxonMobil, Argus, 2023 (https://www.argusmedia.com/en/news/2426988-scope-3-target-would-boost-emissions-exxonmobil#:~:text=ExxonMobil%20has%20no%20target%20for,chief%20executive%20Darren%20Woods%20said.)
xi. Path to net-zero: Lack of emission-reporting

standard clouds oil, gas investment, S&P Global, 2022 (https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/path-to-net-zero-lack-of-emission-reporting-standard-clouds-oil-gas-investment-72752696)
xii. BP pledges net zero for Scope 3 emissions by 2050, ESG Clarity, 2022 (https://esgclarity.com/bp-pledges-net-zero-for-scope-3-emissions-by-2050/)
xiii. Sustainability & Climate 2022 Progress Report - TotalEnergies, 2022 (https://totalenergies.com/sites/g/files/nytnzq121/files/documents/2022-05/Sustainability_Climate_2022_Progress_Report_accessible_version_EN.pdf)
xiv. BP Sustainability Report, 2022 (https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/sustainability/group-reports/bp-sustainability-report-2022.pdf)
xv. https://www.transitionpathwayinitiative.org/sectors/oil-gas
xvi. Sustainability & Climate 2022 Progress Report - TotalEnergies, 2022 (https://totalenergies.com/sites/g/files/nytnzq121/files/documents/2022-05/Sustainability_Climate_2022_Progress_Report_accessible_version_EN.pdf)
xvii. BP Sustainability Report, 2022 (https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/sustainability/group-reports/bp-sustainability-report-2022.pdf)
xviii. Enhancing and standardizing climate-related disclosures, S&P Global (https://www.spglobal.com/esg/solutions/getting-ready-for-the-sec-climate-disclosure-rule#:~:text=Enhancing%20and%20standardizing%20climate%2Drelated,climate%20risks%20to%20transition%20plans)
xix. Proposed SEC Climate Disclosure Rule, Bloomberg Law, 2022 (https://pro.bloomberglaw.com/brief/proposed-sec-climate-disclosure-rule/)
xx. Proposed SEC Climate Disclosure Rule, Bloomberg Law, 2022 (https://pro.bloomberglaw.com/brief/proposed-sec-climate-disclosure-rule/)
xxi. Proposed SEC Climate Disclosure Rule, Bloomberg Law, 2022 (https://pro.bloomberglaw.com/brief/proposed-sec-climate-disclosure-rule/)
xxii. https://www.theguardian.com/environment/2023/may/23/ceo-of-worlds-biggest-carbon-credit-provider-says-he-is-resigning
xxiii. Corporate sustainability reporting, European Commission (https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en)
xxiv. EFRAG approved the European Sustainability Reporting Standards, Marine Digital (https://marine-digital.com/article_esrs)
xxv. Get ready for European Sustainability Reporting, KPMG, 2022 (https://kpmg.com/xx/en/home/insights/2022/05/european-sustainability-reporting-standards-eu-esrs.html)
xxvi. Timeline for adoption and implementation of the CBAM, Persefoni, 2023 (https://www.persefoni.com/learn/eu-carbon-border-adjustment-mechanism#:~:text=The%20CBAM%20is%20a%20carbon,those%20emissions%20with%20CBAM%20certificates.)
xxvii. Engaging in line with our mission, Cheniere, 2022 (https://www.cheniere.com/pdf/Political-engagement.pdf)
xxviii. CO2 price of €200 for EU net zero: Shell, Argus, 2020 (https://www.argusmedia.com/zh/news/2104930-co2-price-of-200-for-eu-net-zero-shell?amp=1)
xxix. https://www.eni.com/en-IT/net-zero/ghg-emission-reduction.html
xxx. Shell Sustainability Report 2021, Shell (https://reports.shell.com/sustainability-report/2021/sustainability-at-shell/our-approach-to-sustainability/remuneration.html)

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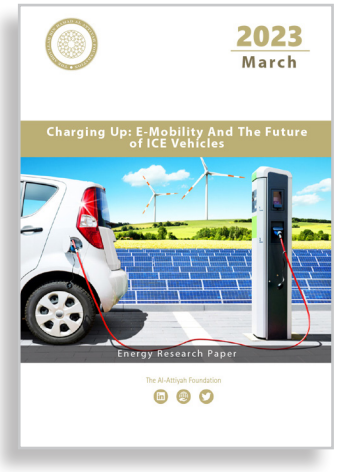

March – 2023

Charging Up: E-Mobility And The Future of ICE Vehicles

Electric vehicles have gained significant market share in the past year and numerous automakers have committed to predominantly EV futures. EVs have gained range, costs have fallen, and numerous governments have rolled out supportive packages for their manufacturing, purchase and charging.

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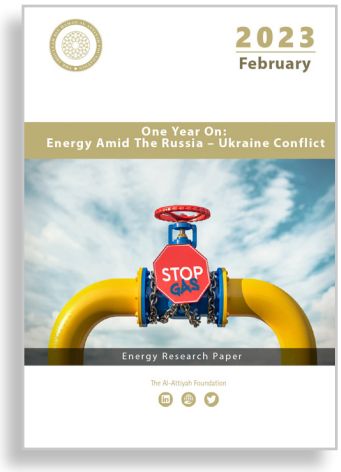

February – 2023

One Year On: Energy Amid The Russia – Ukraine Conflict

The Russian invasion of Ukraine in February 2022 has created shockwaves in global energy markets, with fossil fuel supply shortages, changing energy trade flows, and economic uncertainty. After an initial global energy crisis, much adjustment has happened, but serious risks remain.

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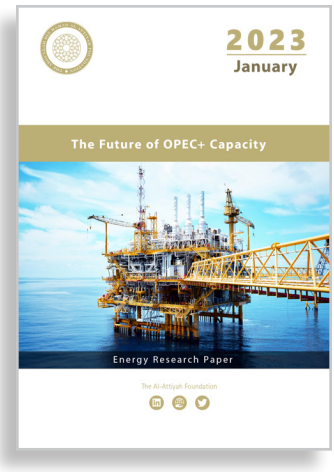

January – 2023

The Future of OPEC+ Capacity

OPEC+ has faced three volatile years:2020, the year of the pandemic and demand plunge; 2021, the year of tight markets and inflation amid pandemicinduced supply bottlenecks; and 2022, the year of geopolitical risk and record-high energy prices.

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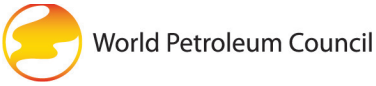
Our partners collaborate with The Al-Attiyah Foundation on various projects and research within the themes of energy and sustainable development.



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