



The Impact of Environmental, Social and Governance (ESG) Measures on Natural Gas Upstream Sector

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1. Introduction

Environmental, social and governance (ESG) criteria and the oil and gas companies' commitment to those rules are becoming one of the main determinants of future natural gas supply. This is because the ESG rules could affect a wide range of activities in the upstream sector. The upstream sector's capital flow and investment level, which is critical for the natural gas industry to secure sufficient supply, are affected by the ramifications of ESG. Therefore, scrutinising the possible impacts of the ESG measures on the companies' activities could help us better estimate new developments in the natural gas market.

Because of the ESG pressure, financing oil and gas projects is getting harder. As a result, banks are creating special departments within their organisations devoted to ESG in order to scrutinise their clients on their sustainability-linked activities. For instance, JPMorgan started an ESG EMBI index. In a recent move, the bank excluded Pertamina (Indonesia) and Petronas (Malaysia) from the index due to a decline in their score for cases of environmental rules violation such as oil spills, according to Reuters. In another move, Citigroup, which previously pledged to become net-zero by 2050, announced a new target for emission reduction in its portfolio.

In this regard, some entities are acting faster than others. For instance, American companies are one step behind their European counterparts where ESG is concerned. At the same time, the ESG measures started to accelerate in some Asian countries. According to Financial Times, the market share of ESG-focused Exchange Traded Funds is growing fast, particularly in Asian countries such as Japan, China, and Singapore.

Pandemic-related insufficient upstream investment, coupled with tightening ESG measures, caused imbalance in natural gas markets from the early months of 2021. It should be noted that the main market participants, including the GECF Member Countries, have been warning about the risks of insufficient investment in recent years.

Meanwhile, lack of investment in natural gas projects during the pandemic and supply disruption in renewables caused higher coal consumption in 2021. This could be considered an unforeseen impact of ESG measures, which limited the sufficient investment in cleaner sources of fossil energies such as natural gas in the past years. With all these disruptions in the energy markets becoming prominent, some research institutes and energy analysts changed their previous aggressive positions and started to emphasise the importance of sufficient investment in the oil and gas industry to prevent any future supply disruption.

This commentary aims to investigate the possible impacts of ESG measures on the upstream activities such as investment level and supply side of the natural gas market. Understanding the relationship between the ESG criteria and upstream activities could provide the policymakers with a comprehensive insight into future developments in the natural gas markets.

2. Environmental, Social and Governance (ESG) Criteria

ESG measures could affect a wide range of oil and gas industry activities from water usage and wellhead leaks, to transportation spills, flared gas level, social cohesion, land use of local communities for exploration and drilling, safety management, transparency, corruption and so on, as indicated in Table 1. However, the most important criterion of ESG, which has the highest impact on oil and gas companies, is the environmental part. As such, it is expected that environmental pillar will significantly affect oil and gas companies' strategies in upcoming years. The recent decision by Shell to eliminate “Dutch” from its name and relocate its headquarters to London is an example of those decisions by oil and gas companies.

The social part mainly includes health and safety issues, interaction with local communities and human rights. For example, the recent decision by TotalEnergies to withdraw from gas projects in Myanmar to protest against human rights violations by the Myanmar government is also one of the decisions inspired by the social criterion of ESG. Moreover, the governance part mostly covers the regulation within the company and the compliance level, transparency and anti-corruption efforts. All the factors mentioned above increase the costs for oil and gas companies to create such systems to comply with the ESG requirements.

Table 1: ESG Criteria

Environmental	<ul style="list-style-type: none">• Emission reduction such as flaring• Water and waste management• Oil and gas leak and spill prevention• Land and wildlife preservation
Social	<ul style="list-style-type: none">• Local employment• Personnel safety management• Procurement from domestic sources• Land use of local communities
Governance	<ul style="list-style-type: none">• Anti-corruption rules• Transparency• Practical regulations and compliance level

Source: Kerogen Capital, 2021

3. ESG Impact on Oil and Gas Companies

With a growing focus on ESG frameworks, financing oil and gas projects by banks and financial institutions is becoming more difficult. In the meantime, the oil and gas companies are under scrutiny from the shareholders and investors to do more on ESG requirements. Therefore, in line with international movements to reduce GHG emissions, upstream companies are shifting strategies to comply with ESG criteria (Table 2). As an example of rising pressure, in May 2021, a court in the Netherlands ruled the company, Shell, to cut its emissions level by 45% by 2030 compared to the 2019 levels. Due to all those pressures from environmentalists and the Netherlands' government, the company decided to move its headquarters to London.

ESG affected IOCs in Europe and their counterparts in the US differently. Even though the US is the top upstream methane emitter, the US oil and gas companies are one step behind the European companies where ESG is concerned. Also, ESG affects IOCs and NOCs in different ways as their stakeholders are different.

The oil price collapse in 2014 and uncertainties on the future oil market have made the oil and gas companies look for alternative energy investment options. In this regard, they shifted their investment from upstream to clean energy activities and downstream after the oil price crash in 2014. Likewise, during the pandemic, upstream companies took similar measures. In addition to the attempts to cut their production costs and getting involved in more mergers and acquisitions to protect themselves from the negative impacts of the pandemic, they shifted their strategies to renewable sources to hedge themselves against future oil and gas price fluctuations. Also, they made changes in their structure by separating the legacy and energy transition businesses.

Table 2: ESG and Oil and Gas Upstream Companies' Shifting Strategies

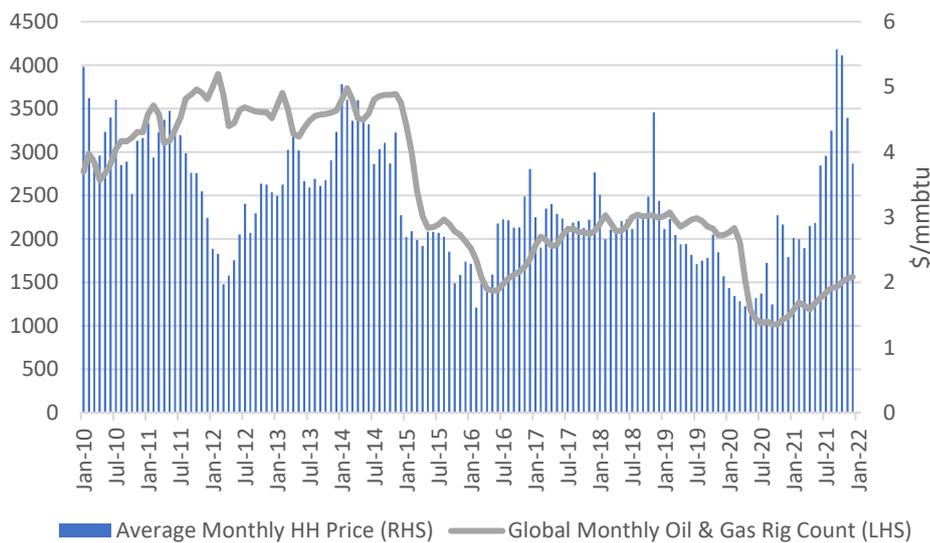
Oil and Gas Company	Activities and plans in clean energy	Oil and Gas Company	Activities and plans in clean energy
Shell	<ul style="list-style-type: none"> Creating new division for gas, renewables and power Stakeholder in a US solar company Plans to spend 1-2 billion USD per year on clean energy To sell some of its fossil energy assets To expand its hydrogen business, power trading and biofuels 	Equinor	<ul style="list-style-type: none"> Eliminating the word "oil" from its former name "Statoil" Active in wind business Spending 15% to 20% of annual budget on clean energy by 2030 To expand its hydrogen business
BP	<ul style="list-style-type: none"> To spin off some of its fossil energy assets To expand its hydrogen business To eliminate its reserve replacement ratio 	TotalEnergies	<ul style="list-style-type: none"> Changed its name to TotalEnergies Active in biofuel, solar and electric vehicle charging market To stop its activities in Myanmar
Chevron	<ul style="list-style-type: none"> Investment in CCS projects in Canada and Australia To reduce its carbon emissions To stop its activities in Myanmar 	ExxonMobil	<ul style="list-style-type: none"> Investment in low carbon technologies
Eni	<ul style="list-style-type: none"> Raised its decarbonization targets 		

Source: GECF Daily News Platform

4. ESG & Global Upstream Investment Cycles

As a usual practice, the oil and gas companies reduce their upstream activities and remove their less efficient rigs in a low-price environment. In the oil and gas market crashes, we observed a declining number of active rigs as the producers had a lower tendency to produce more. This declining number of active rigs affects the future supply of natural gas and forms the cyclical behaviour of natural gas markets. This cyclical behaviour of natural gas markets is indicated in Figure 1.

Figure 1: Oil and Gas Rig Count vs. HH price

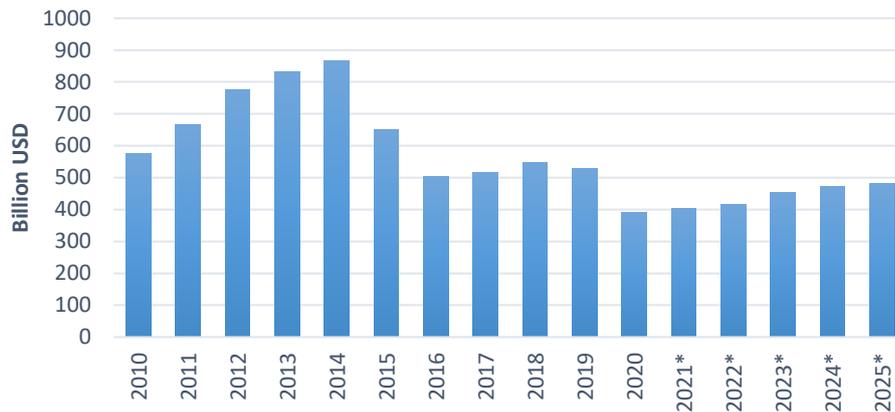


Source: GECF based on data from Baker Hughes, Refinitiv

The impacts of ESG on upstream activities such as investment level, rig count and upstream employment should be assessed within the context of the cyclical behaviour of the natural gas market. Recent natural gas price fluctuations and supply shortages are proof of inadequate upstream investment levels due to low oil and natural gas price levels in the pandemic and also ESG pressure in the recovery period (Figure 2).

Preliminary estimations of the global oil and gas investment indicate a mere increase of USD 12 billion (2% increase) in 2021 y-o-y, despite the attractive oil and gas prices. There is no doubt that the pandemic severely hit the oil and gas sector. However, in the current investment cycle, we witness the recovery pace of active oil and gas rigs and the investment level is slow, primarily due to the impact of ESG measures.

Figure 2: Global Oil and Natural Gas Upstream Investment



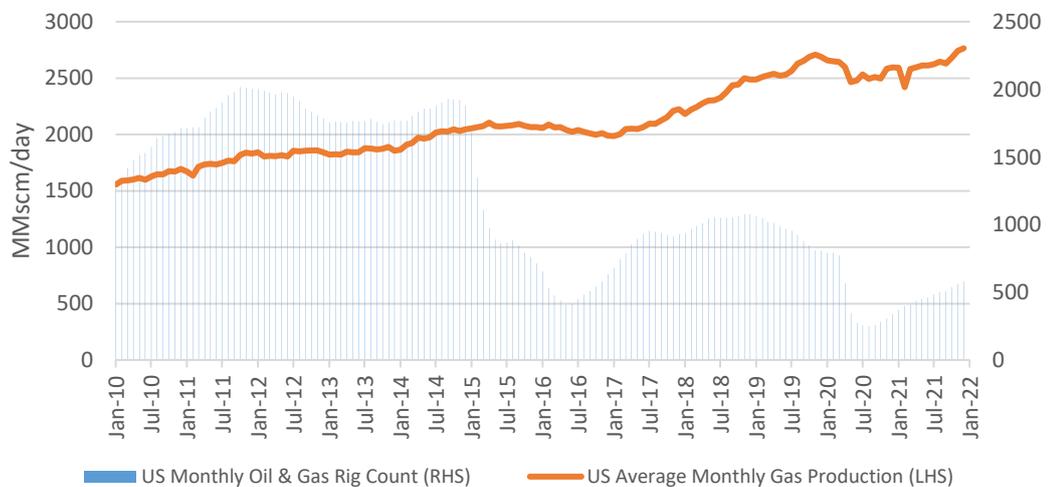
Source: GECF Secretariat based on data from Rystad Energy

*Estimation for 2021 and forecast for 2022-2025

The insufficient investment caused a shortage of natural gas supply and price volatility in the markets. According to a survey conducted by the Energy Intelligence, the main challenges of the oil and gas industry in 2022 will be the lack of upstream investment and ESG pressure. Based on this survey, access to funds will be much harder for oil and gas companies in 2022.

Even though the cost of capital for upstream oil and gas projects is increasing due to ESG measures, efficiency improvement in the upstream sector could somehow offset those effects from ESG. The capital efficiency has improved since 2014, so we witnessed a more resilient supply of natural gas despite the low investment level in the price crash of 2020 as indicated in Figure 3. For instance, Rystad Energy reported that the drilling and completion cost per lateral length foot in the US declined from USD 1,220 in the first quarter of 2014 to USD 730 in the third quarter of 2016.

Figure 3: Gas Production vs. Total Oil and Gas Rig Count in the US



Source: GECF based on data from Baker Hughes, Refinitiv

5. The Consequences of ESG Measures

Implementation of ESG measures increases the costs for oil and gas companies, even though they are increasing efficiency to offset some portion of those adverse effects. In addition, with tightening ESG requirements, projects with a lower carbon footprint are becoming more attractive for investors.

The impact of ESG requirements on upstream activities should be analysed in different time horizons separately. In the mid-term, even though the oil and gas companies dedicate a portion of their annual spending on renewables and clean energy technologies, this portion remains meagre, and it is expected that the oil and gas business will remain a significant part of their investment portfolio. However, in the longer term, their shifting investment strategy could affect the investment level in the oil and gas upstream sector.

As previously mentioned, ESG measures could affect the entire natural gas value-chain in upcoming years. In this regard, natural gas decarbonisation will play a crucial role in well positioning this reliable source of energy in the global energy mix. Decarbonisation of natural gas comprises a wide range of technologies, including reducing carbon emissions from natural gas across the entire value chain (pre-combustion and post-combustion).

Meanwhile, natural gas decarbonisation is a good field of collaboration among GECF Member Countries. The GECF Members could be well prepared for the new ESG developments by increasing their cooperation in decarbonisation technologies. It should be recalled that some of the GECF Member Countries own the world's largest natural gas infrastructures, such as natural gas upstream facilities, injection facilities and pipeline networks. They gained valuable experience in the design and successful running of these facilities during the years of operation. This is a good potential for them to develop decarbonisation methods such as carbon capture, utilisation and storage (CCUS), as some of those technologies, such as gas-injection into fields, are already in use in oil and gas projects. In addition, blue hydrogen technologies and blending hydrogen in existing natural gas infrastructure are other methods to improve the position of natural gas in the global energy mix. It is worth mentioning that some of the GECF Member Countries started to invest in blue hydrogen technologies in recent months.

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