Sustainability in the Desert: ESG Governance Practices in Saudi Arabia's Oil Industry

Tingru Bao*

Jinling High School Hexi Campus International Department, Nanjing, China

*Corresponding author: martinabao787@outlook.com

Abstract. Sustainability has become an important issue for companies and countries, especially in the energy sector. As one of the world's largest oil exporters, Saudi Arabia's oil industry's practices are essential. By taking Saudi Aramco (Aramco) as an example, this article explores sustainable development practices in the desert of Saudi Arabia, focusing on its strategies and results in environmental protection, social responsibility, and corporate governance. As the world's leading energy company, Aramco dominates the oil industry and has actively taken steps to address the growing challenges in environmental protection, supporting the diversity and equality of its employees and the development of local community development, and still be able to have sound financial results to pay back to its shareholders. In this article, the case of Aramco is used to explore in depth the best environmental, social, and governance (ESG) practices of energy companies, research of Aramco's ESG strategies, threats of balancing economic growth with environmental protection in resource-rich but environmentally vulnerable regions, and the difficulties of promoting labor equality would be conducted, and how the best practices can impact and inspire the sustainable development processes on a global scale would be discussed..

Keywords: Saudi Aramco; environmental; social responsibility; corporate governance; ESG; Sustainability; Shell; ExxonMobil.

1. Introduction

Saudi Aramco (Aramco) is Saudi Arabia's national oil company and one of the world's largest integrated energy and chemicals companies [1]. As of 2022, Statista data shows that Aramco is far ahead of the global oil majors with huge oil and gas reserves of 259 billion barrels. Its reserves are about 14 times that of the second ExxonMobil, which supports its market value of up to 1.8 trillion US dollars, consolidating its dominance in the global energy market [2]. As can be seen from the comparison of 2022 oil reserves of major energy companies in Figure 1 below, Saudi Aramco occupies a dominant position in storage capacity.

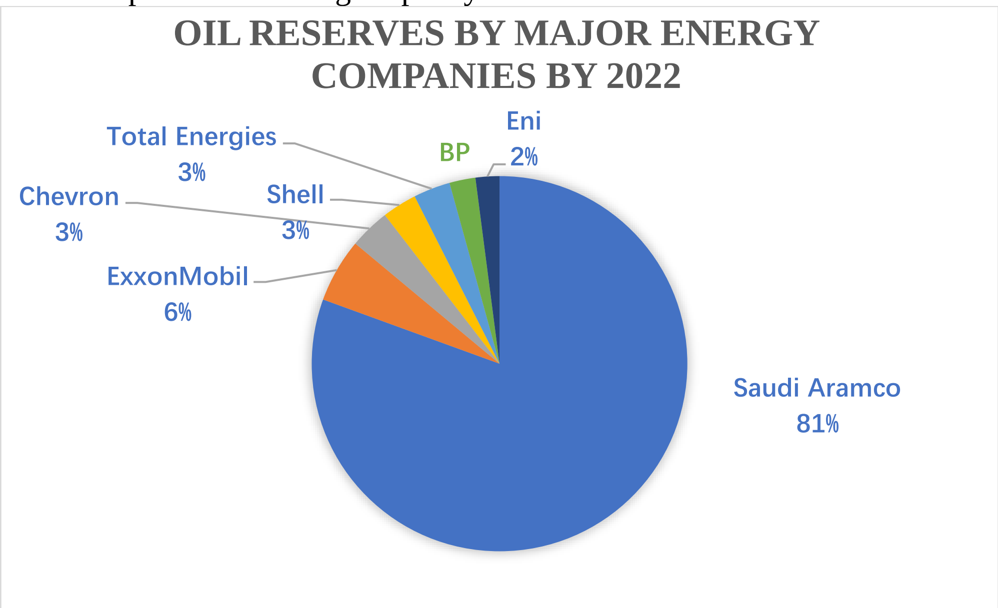

Fig. 1 Oil reserves by major energy companies [2]

In the energy industry, ESG is a topic that cannot be avoided. Companies with poor ESG performance tend to suffer the share prices slump, as investors are aware of the operational risks associated with companies that have been discredited due to poor ESG practices. Conversely, companies that actively adhere to the ESG principles are likely to enjoy higher share prices because the investors consider such investment more sustainable. ESG factors not only affect the reputation and market performance of enterprises but also have a significant influence on the financing capacity of enterprises. Creditors are increasingly scrutinizing ESG standards when approving loans. They tend to support companies with a sound ESG performance, arguing that they demonstrate lower risk and as a consequence, greater solvency [3].

To sum up, ESG factors have become an integral part of the energy industry, and companies that ignore ESG principles may find themselves at a competitive disadvantage in the future. This applies to the traditional energy company Aramco as well. Thus, in this article, what impact ESG has had on traditional energy companies and the comparison with other two energy companies would be discussed.

2. The Concept of ESG and ESG Rating

From the 1940s, people began to explore how to evaluate the balance between economic benefits and social and environmental sustainability of enterprises, and promoted the emergence of the concept of "sustainable development". Subsequently, it went through a variety of approaches, such as the development of concepts such as corporate sustainability, corporate social responsibility, and socially responsible investment. Among them, the concept of ESG, which considers environmental impact, social benefits, and corporate governance levels, has gradually been adopted. Compared to sustainability and corporate social responsibility, ESG is more specific and quantifiable, including data and metrics companies and investors use in their decisions. The three dimensions of the ESG include whether the organization has a role in environmental protection, for example, addressing issues such as climate change, greenhouse gas emissions, deforestation, biodiversity, carbon emissions, waste management, and pollution; the impact of organizations on people, cultures, and communities, including social impacts such as diversity, inclusion, human rights, and supply chains; and how the organization is managed includes executive compensation, succession planning, board management practices, and shareholder rights [4].

ESG rating agencies help assess ESG risk by collecting and analyzing data from corporate disclosures, government and NGO reports, media coverage, and other data resources, covering more than 1,000 indicators. These agencies assess the ESG risks to the company's industry and region and consider the ability of the company to address these risks. Take the MSCI ESG Rating, for example, the ESG evaluators selected 35 key ESG questions for each industry and weighted them according to MSCI's research framework. Finally, the scores of enterprises in environmental, social, and corporate governance are given respectively, and the overall ESG rating of enterprises is obtained by comprehensive weighting (AAA-CCC) [5].

3. Saudi Aramco’s ESG Strategy

3.1. The ESG Measures of Saudi Aramco

Aramco has invested a great effort to improve its ESG performance.

3.1.1 Environmental measures (E)

From the aspect of environmental protection, Saudi Aramco has done a lot to reduce carbon emissions. Aramco carefully manages the field to maintain pressure, maximize oil and gas recovery, and significantly reduce gas release to less than 1% intensity. Aramco implements rigorous methane leak detection and remediation and has a methane emission intensity of just 0.06%, which is among the highest in the industry. It implements strict greenhouse gas management measures and is committed to improving energy efficiency, implementing more than 200 energy-saving measures alone in 2019. Since 2000, cumulative savings of 239 million barrels of oil equivalent have been achieved, equivalent to a reduction of 25 million tons of carbon dioxide ($CO2$) emissions. It also uses real-time analytics from the Center for the Fourth Industrial Revolution to monitor a company's emissions, product quality, energy efficiency, and more in real-time to identify and solve problems promptly [6].

Aramco also uses a carbon circular economy model. It is a closed-loop system that involves four key elements: reduction, reuse, recycling, and removal. This model aims to manage and reduce carbon emissions to achieve sustainable development. Reducing carbon emissions includes improving energy efficiency, reducing natural gas emissions, and developing low-carbon energy sources. Reuse is the recapture of carbon dioxide, which can be used to increase oil production or make products such as fuels, chemicals, and building materials. Recycling captured carbon dioxide is to convert it into new materials such as fertilizer and cement. Methods of removing carbon dioxide include the use of carbon capture technology and natural carbon sequestration such as afforestation [7].

3.1.2 Social measures (S)

In terms of social responsibility, Aramco runs social responsibility programs, values female innovators, and works to help the country increase employment.

Aramco has launched a community program for school students to instill environmental sustainability lessons through hands-on experience. Students and staff plant a green plant each on the beach terrace to experience environmental action. The Little Green Hands campaign ran three events, covering both public and private schools, including schools for students with special needs and developmental disabilities [8].

Inside the company, Aramco's Research and Development Center is home to many outstanding women scientists who have achieved significant innovations in the fields of fuel analysis, catalysis, and petrochemistry, making important contributions to the development of the energy industry. These women scientists continue to make breakthroughs in their fields of expertise and actively share knowledge and experience with young scientists, playing an important leading role [9]. Aramco values the role of women in research and innovation and provides them with a good development platform and support, reflecting the company's emphasis on gender equality and diversity.

To improve the supply chain, Aramco has developed innovative programs such as In-Kingdom Total Value Add (iktva) and the National "Champions" program, which aims to foster a local business ecosystem to ensure the localization of the supply chain, which can create more jobs and thus contribute in economic growth. The iktva program aims to localize 70 percent of Aramco's supply chain, attract large-scale investments, and establish long-term partnerships with strategic suppliers to improve supply chain efficiency and the ability to export local energy products and services." The National Champions program supports start-ups from seed to growth through four complementary programs - LAB7, Wa'ed Ventures, Taleed, and Namaat - to foster a sustainable, high-tech industrial base that creates local jobs [8].

3.1.3 Corporate Governance measures (G)

Though it is a state-owned energy company, Aramco’s corporate governance framework is not the same as the other state-owned corporations. Instead, it is heavily influenced by the British and American models, which focus on maximizing shareholder wealth. Yet it must act under the Sharia law, which emphasizes on social equity and stakeholder participation. As a result, Aramco has taken steps to find its place in the two sets of corporate governance concepts, such as introducing disclosure and transparency standards, establishing a capital markets authority, and enacting corporate governance regulations.

Aramco is a state-owned company with relatively low tax rates and administrative burdens. However, the executive salary is high, especially that of the foreign executives [10], which increases the cost burdens.

Aramco's highest decision-making body is the Board of Directors, of which shareholders appoint the members. To be a board candidate, a candidate must hold shares in the company worth at least 10,000 Saudi riyals (about $2,666). The board of directors usually consists of eight directors and a maximum term of three years. Directors' compensation must also be disclosed in the annual board report and must not exceed 10% of the company's net profit [11].

3.2. Saudi Aramco's Success

Thanks to its ESG initiatives, Aramco has already made some achievements in various aspects. It is actively engaged in the achievement of the United Nations Sustainable Development Goals (SDGs), sharing its experience on SDG at the United Nations High-level Political Forum on Sustainable Development (HLPF), and contributing to global SDG capacity building. It has made significant progress in reducing emissions from conventional torches, with a torch intensity of less than 1%, which is among the highest in the industry [8]. It has been exploring the use of microalgae to produce bio-crude oil and studying the potential of microalgae applications in carbon capture, animal feed, and sustainable fertilizers, among other innovative initiatives that could contribute to the goal of net-zero carbon emissions by 2050. Its investment and innovative practices in ESG not only contribute to meet its sustainable development goals, but also to the global response to climate change and sustainable development, reflecting its social responsibility as a responsible company [12]. It has deployed online analyzers in water quality monitoring to improve monitoring efficiency, reduce costs, and enable early warning to better manage environmental risks.

4. Comparison among Saudi Aramco and the Other Two Industry Giants

Aramco, ExxonMobil, and Shell are among the world's leading oil companies. They are all involved in different aspects of the energy industry, including exploration, extraction, and sales. In the core technology field, the three companies have strong technical strength, especially in traditional energy development has a deep accumulation and advantages.

Yet they are professions in different segmentations. Aramco is primarily focused on oil and gas exploration, extraction, and sales, and has a relatively simple business. ExxonMobil and Shell are involved in many more divisions, including refining, chemicals, and others. Saudi Aramco, as a fossil fuel producer, has high carbon emissions, and the other two companies are taking steps to reduce their carbon footprint. In terms of public image, Saudi Aramco is more conservative as a state-owned company, while the other two are more socially responsible and have a better public image.

4.1. The ESG Scores

The basic characteristics of each company also form an important basis for their ESG ratings.

Table 1. ESG ratings of three companies [13-15]

	Saudi Aramco	ExxonMobil	Shell
ESG rating	BB	BBB	AA
% of company footprint covered by target	10.05%	9.79%	100.00%
Projected reduction per year to meet stated target	0.67% p.a.	0.69% p.a	-3.57% p.a.
Business Involvement	alcohol	NO	tobacco,alcohol
Severe structural controversies	NO	YES(7)	YES(5)
Global climate goals	strongly misaligned	strongly misaligned	alined

Aramco has kept its BB rating on ESG unchanged since July 2020, placing it in the lower middle of the pack among 33 rated companies. As can be seen from the results, Aramco has a decarbonization target and the expected reduction per year is 0.67% p.a. In terms of companies covered by decarbonization targets, Aramco is 10.05%. However, the company's emissions target is not enough to help limit global warming to 1.5 degrees and is badly misjudged to be 3.2 degrees and above [13].

ExxonMobil is integrating sustainability into its business strategy and investing more than $20 billion in low-emission technologies and solutions, including carbon capture and storage, hydrogen, lithium, and biofuels. ExxonMobil has a sustainability committee, but it lacks shareholder participation and transparency, and its governance structure lacks flexibility [16]. It has a score of BBB unchanged since June 2021, slightly higher than Saudi Aramco. It has been involved in several serious structural disputes regarding the environment, governance, and especially social and human rights [14], which has contributed to the not-so-good ESG result.

With a score of AA, Shell has the best ESG score among the three since September 2021. It has achieved 100 percent of the decarbonization targets covering the company. The company aligns with the global warming control mandate of the Paris Agreement [15]. It has set a goal of net zero emissions by 2050 and thus has been investing heavily in renewable energy projects to achieve carbon neutrality through technological innovation. It also plans to reduce its greenhouse gas emissions intensity by 30% by 2030. It attaches equal importance to employee rights and occupational safety, participates in local communities, and supports economic development through pro bono projects. Shell has established a sound ESG management system, with a special committee to supervise the implementation of ESG objectives, anti-corruption, and business ethics, Shell has also formulated strict rules and regulations [17].

4.2. The Financial Performance

From the financial performance aspect, Aramco has a strong ability to manage profits and funds [12], as shown in Table 2.

Table 2. The three companies' annual reports for 2023 [12, 18, 19]

	Aramco	ExxonMobil	Shell
Net profit margin	24.50%	10.50%	6.10%
Free cash flow/billion	101.2	36.1	36.5
Earnings per share/$	0.5	8.89	2.88
Asset-liability ratio	30.00%	43.50%	18.80%
Return on Average Capital Employed	22.50%	15.00%	8.40%

With a 24.5% net profit margin, Aramco's net profit margin is much higher than that of ExxonMobil and Shell, which means that it gains more from sales or spends less on costs than the two companies.

Aramco's free cash flow is $101.2 billion significantly higher than ExxonMobil and Shell's. since free cash flow measures the amount of cash a company has at its disposal, after capital expenditures, to pay down debt, reinvest, or pay dividends, one can learn that Aramco has more cash in hand which can be used to support its future development. It means the adequate free cash flow can help Aramco to invest in environmental initiatives, social responsibility programs, and governance improvements, so that to boost ESG results.

Earnings per share (EPS) indicates the return for the shareholders of each share. ExxonMobil has the highest EPS, while its net profit margin is lower than Aramco's. Low profits may prompt companies to focus more on improving governance and transparency to attract investors and stabilize share prices. Low EPS may cause concern among investors, especially those focused on ESG performance. Aramco may be under pressure to make more ESG improvements to attract such investors.

The asset-liability ratio illustrates how much of a company's assets are financed by liabilities. Aramco's low balance sheet ratio indicates that the company is in good condition of both financial stability and flexibility. It relies less on debt financing than the other two, meaning lower financial risk than the other two. A lower asset-liability ratio may provide companies with more governance flexibility, enabling them to focus more on corporate governance best practices, including developing and adhering to high standards of transparency and ethics. Investors may view a lower balance sheet ratio as a sign of a company's financial health and place a higher value on the company's ESG performance.

Aramco has the highest return on capital at 22.50 percent, indicating that it is very efficient in using capital to generate returns. A high return on capital indicates that the company can use capital efficiently to improve employee welfare and community development projects. It also puts Aramco in a strong position for strategy implementation and investor relations, thereby indirectly improving ESG performance.

Aramco's revenues are primarily derived from the sale of oil and gas, which is highly affected by fluctuations in global energy market prices and global supply and demand conditions. When the price of oil is high, it can make good profits, but if the price falls, it may face profit pressure. Aramco has abundant resources in the Middle East, which has lowered the cost of extraction to some extent, but the huge scale and main operations also mean high expenditure. As the global demand for renewable energy and low-carbon technologies increases, Aramco may need to consider future strategic adjustments and investments to adapt to changes in the energy market.

4.3. Differences in Economic Outcomes

Aramco's net profit margin is the highest of the three companies as its production scale and market dominance as the world's largest oil producer allow it to enjoy economies of scale and lower production costs that boost margins. Efficient operations and a low-cost structure have also enhanced its profitability. Aramco's high dependence on traditional oil operations could limit the company's flexibility in transitioning to a low-carbon economy.

Aramco's earnings per share were the lowest of the three companies, which could be due to Aramco's larger capital expenditure on expansion and investment, which could result in a smaller distribution of profits to earnings per share. There will also be a financial cost to its balance sheet. The transformation on the ESG side may not be mature enough, causing the company to invest more resources in the transformation, and these investments have not yet fully translated into earnings, impacting earnings per share. As a strategic asset, Aramco's earnings distribution policy can be influenced by political factors, which can also affect the performance of EPS.

Aramco stood out with $121.3 billion in profitability and a 22.5 percent return on capital, in part reflecting its market dominance as the world's largest oil producer and its efficient operations [12]. Despite its relatively low ESG rating, Aramco, the world's largest oil producer, pumps about 10 million barrels of oil a day, providing the economic foundation for the transition. At the same time, Aramco's sustainable development Goals are aligned with Saudi Vision 2030 and have government support to ensure the long-term stability of the ESG strategy [13]. Exxon has a net profit margin of 10.5 percent and a return on capital of 15 percent, but its free cash flow and debt-to-asset ratio are conservative relative to Aramco [18]. Exxon will spend only about $240 million on renewables in 2021, well below the industry average, and will spend about 70 percent of its capital spending on oil and gas projects in 2022, reflecting its bias toward short-term profits and increasing the risk of long-term economic returns [14]. Shell's net margin and return on capital are relatively low, at 6.1% and 8.4% respectively, but it performs well in ESG, earning it an AA rating [19]. Shell plans to invest $25 billion to $30 billion in renewable energy and low-carbon technologies between 2021 and 2025 to drive long-term revenue growth. It has an internal carbon price of $40 per tonne to support emissions reduction targets and improve financial stability. By 2022, Shell's renewable energy revenue will reach $2.4 billion, a gradual increase in the proportion of total revenue, showing the increase in market value and brand image. Shell is actively investing in renewable energy and low-carbon technologies, including a goal to achieve net zero emissions by 2050, and has already met company-wide carbon reduction targets [15].

Due to its leading ESG rating (AA rating) and commitment to sustainability, Shell is likely to be more favored by investors and consumers, which contributes to its market image and brand value. Aramco and ExxonMobil, while technically strong in their traditional energy businesses, have relatively low ESG performance and market acceptance, which could limit their speed of development and market acceptance in ESG investments and new energy sectors. Despite Aramco's strong financial performance, its high balance sheet ratios and reliance on traditional energy businesses may limit the flexibility and speed of its transition to ESG. Including Aramco as a strategic national asset, the company's operations will be affected by politics, which will also affect the disclosure of information. ExxonMobil's return on capital and profitability are strong, but high capex and ESG challenges could limit its long-term growth and market sustainability. As the global demand for renewable energy and low-carbon technologies increases, Shell's investment and development in these areas could lead to additional market opportunities and long-term benefits. Aramco and ExxonMobil need to strengthen their strategic alignment and investment in ESG to improve their competitiveness and sustainability in future energy markets.

5. Conclusion

Through the case study of Aramco, one can learn that ESG efforts affect the financial results, and in turn, the financial performance influences future ESG plans. Only if one company has its decision of investment balance in ESG and primary business, can it succeed in gaining both short-term return and long-term sustainability.

However, this article has focused only on the analysis of the impact of ESG on the financial results, but the factors affecting one entity’s financial performance are far more than the ESG factors. As an iterative concept of ESG itself, the ratings, evaluation methods, and even the area of assessment may change in the future. In addition, there is a force of anti-ESG existing, protesting the complexity of rating and the different standards of rating agencies confusing the users of ESG-related reports. The way of assessing one company might be changed, and it would be followed and studied in the future.

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