

**ORGANIZATIONAL RESPONSES TO CLIMATE
CHANGE RELATED STIGMATIZATION IN
MULTINATIONAL OIL & GAS INDUSTRY**

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ABSTRACT

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Title of thesis Organizational Responses to Climate Change Related Stigmatization in Multinational Oil and Gas Industry	
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Abstract The oil and gas industry stands out as one of the most prominent contributors to the climate change problem. In view of growing stakeholder scrutiny and tightening legislation, the sector confronts stigmatization due to the immense carbon footprint of conventional operations. Organizational responses of multinational firms to this profound illegitimacy status carry great importance to avoid the potentially catastrophic outcomes of global warming. Hence, this study strives to achieve a better understanding of the stigma reduction strategies that were developed and implemented by the leading oil and gas companies throughout the last decade. Accordingly, the research adopted a mixed methodology, and a content analysis was conducted for the voluntary disclosures of influential organizations. The findings of the assessment were interpreted in line with the theoretical framework of stigma management strategies. It was revealed that a combination of both symbolic and substantial methods was introduced by oil and gas businesses to cope with the intensifying societal disapproval. The results indicated that transformative approaches of category straddling and asset divestment were gaining popularity among examined firms in recent years. Companies recognized the advancements in renewable energy technologies and claimed the membership of this legitimate field through their investments in an increasing manner. The urgent need for a shift in fossil fuel sectors towards the low carbon sources to keep the atmospheric temperature under 2°C degrees above pre-industrial levels in line with the Paris Agreement goals makes such trends invaluable for the future of climate action. Furthermore, inferences of this research add to the literature on the classification of organizational responses to stigma.	
Keywords Organizational responses to stigmatization, climate change, oil and gas industry	
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1 INTRODUCTION

Stigmatization is an essential concept that calls organizations for action to ensure the moral legitimacy of their activities. Morals regulate most of the social interaction for organizations, and stakeholders may stigmatize businesses by simply denouncing unethical features inherent in their operations (Hampel & Tracey, 2019). Categorical stigma steps in at this point as a critical term that refers to the classification of an entire group of organizations labelled as fields with similar undesirable attributes by the society (Piazza & Perretti, 2015). Hence, a stigmatized organization can be regarded as essentially flawed for being a symbol of the negatively evaluated category, therefore condemned as an embodiment of values explicitly in dispute with those of the stakeholders (Devers et al., 2009). This study recognizes stigmatization fundamentally as a category-level trait and considers societal disapproval as an industry-level outcome (Vergne, 2012).

Even though condemnation may be originated from a specific negative incident, that may not apply to all cases. Core-stigmatized organizations may face contestation of external groups based on the nature of their core attributes rather than a specific controversial event, as can be observed in tobacco and arms industries (Hudson, 2008). On the other hand, some firms may occasionally deviate from societal values but still manage to maintain legitimacy since the discrepancies may be rejected as exceptional events by audiences (Suchman, 1995). However, retaining legitimacy for core-stigmatized businesses may be much more challenging since, in their case, experienced disapproval is connected to fundamental features of organizations that may require strategic responses.

1.1 Oil and Gas Business: A Stigmatized Field

The oil and gas business is a major industry in the energy sector and a prominent actor in the global economy as the world's primary fuel supplier (Burclaff, 2020). The market size of the international oil and gas exploration and production industry is \$2.1 trillion in 2021, which makes it the 8th largest business in the world economy (IBISWorld, 2021).

Supermajor integrated companies stand out as key players of this immense sector due to the scale of their operations which covers all aspects of the value chain, from exploration and refining to marketing and retail (Teague, 2014). They are usually defined as publicly owned international firms with market capitalization of more than \$100 billion (Burclaff, 2020). Wood et al. (2016) emphasized that supermajor companies dominated the global market following World War II through the activities of the Seven Sisters' cartel which was consisted of Royal Dutch Shell, British Petroleum, Gulf, Exxon, Mobil, Texaco, and Chevron. The sisters had the exclusive right to explore, refine and distribute oil in the territories of nations with abundant petroleum resources in exchange for giving a portion of their profits to the country in which they operated (Wood et al., 2016).

However, Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela, as the leading oil-producing nations, were dissatisfied with control of the multinational firms on their natural resources, hence they formed the Organization of the Petroleum Exporting Countries (OPEC) as an intergovernmental organization to ensure the stabilization of oil markets and defend the member countries' interests in 1960 (OPEC, 2021). Furthermore, The Organization of Arab Petroleum Exporting Countries (OAPEC) was established as a regional organization in 1968 with the aim of consolidating the position of the oil-exporting Arab nations in the industry (OAPEC, 2018). In 1973, member states imposed an historical oil embargo upon the nations that were supporting Israel in the October War which led to a global energy crisis that had significant consequences on the economies of the developed western countries (Willner, 2018). As a response to the crisis, The International Energy Agency (IEA) was created by the Organisation for Economic Cooperation and Development (OECD) in 1974 to coordinate a united reaction to major disruptions in the global oil supplies (IEA, 2020c).

It can be concluded that the modern era of the global oil and gas market has witnessed historical clashes among the powerhouses such as supermajor firms, oil-exporting countries, western nations, and intergovernmental organizations.

The oil and gas industry, along with its mentioned actors, is a field that has a long history of being a significant target of hostile audiences (Hiatt et al., 2015). The sector is heavily regulated and constantly monitored by authorities due to safety and environmental concerns inherent to its conventional operations (Hoffman, 1999). Categorizing this controversial and large-scale industry in terms of its organizational legitimacy status may differ in academia, depending on the adopted approach. For example, Durand and Vergne (2015) preferred to classify the oil industry as a contested field instead of a stigmatized one owing to specific unfavourable events linked to the business, such as oil spill accidents which is a type of contestation that is bounded in time and space. However, it would be inadequate to claim that environmental issues related to the tainted sector's activities are merely limited with individual incidents, considering the significant climate change contribution of the business's contentious core features. Therefore, by embracing the definition of Hudson (2008), it can be inferred that the industry is experiencing both event and core-stigma. Herein, this study concentrates on the climate change aspect, thus treating the oil and gas field as an essentially core-stigmatized category.

Climate crisis poses an unequivocal threat for the sustainable development of humanity more than ever. The National Aeronautics and Space Administration (NASA) indicated the last decade as the single warmest period on record (Brown, 2021). Continued high emissions of human-induced greenhouse gases (GHGs) expected to lead catastrophic outcomes globally within this century for the ecosystems, human health, livelihoods, and assets (O'Neill et al., 2017).

In this alarming situation, Intergovernmental Panel on Climate Change (IPCC, 2014) emphasized that the energy industry was responsible for approximately 35% of total anthropogenic GHG emissions in 2010. As a fossil-fuel-based energy production sector, the oil and gas field comprised more than half of the global energy mix. Hence, it played a major role in terms of the sector-related carbon footprint in 2018 (IEA, 2020a).

Consequently, the sector confronts a growing stakeholder scrutiny and societal disapproval due to its carbon-intensive operations and products. Millions of protesters around the world keep raising their demands for urgent climate action in recent years (Taylor et al, 2019). The activists in U.S. carried out several strategies to make global warming a national concern by supporting scientific research, coordinating demonstrations against oil and gas companies, and advocating legislations to limit GHG emissions (Hiatt et al., 2015). It can be inferred that the gravity of the climate change impacts gradually strengthens the influence of stakeholder groups such as environmental organizations on the organizational level (Levy & Egan, 2003).

Climate activism of stakeholder coalitions can drive government agencies to tighten legislations and even stimulate the development of international institutions under the supervision of the United Nations (Levy & Egan, 2003). Adoption of a regulatory structure that is previously communicated with affected groups may create a solid foundation for societal pressure that aims at the oil and gas field (Abreu et al., 2021). Thus, rising awareness of the society may intensify legal responsibilities for fossil fuel activities. The stronger the legal enforcement measures get, the likelihood of companies engaging in social responsibility activities increases substantially (Chih et al., 2010).

In addition, acknowledgment of the global crisis by high-profile stakeholder groups raises the likelihood that the remaining of the society will recognize the stigmatized features as well (Devers et al., 2009). Carberry and King (2012) emphasized that it is not certain the initial disclosure of an immoral attribute will lead to stigmatization for an organization. Suchman (1995) supported this argument by stating that a company may deviate from norms of certain stakeholder groups but maintain legitimacy because the departure draws no societal disapproval. However, as the popularity of claims regarding deviance grows, the tendency of diverse audiences to realize the nonconformity and condemn a business as fundamentally flawed will rise as well (Carberry & King, 2012). Hence, allegations of reliable and influential stakeholder groups in terms of the oil and gas industry's contribution to climate change can be named as a significant factor that solidifies the overall stigmatization of the field.

It should be noted that the magnitude of the encountered core-stigma may be dependent on various issues, including the gap between moral expectations of stakeholders and fundamental features of organizations, the awareness of the society regarding the essential attributes of companies, and the size and influence of the stigmatizing groups (Hudson, 2008). Societal expectations are increasing for the oil and gas industry while the recognition of the potentially disastrous outcomes of the climate crisis is gradually rising. Moreover, stigmatizing stakeholder groups are becoming larger in size, and their influence over companies is

intensifying. Therefore, it can be inferred that all the stated stigmatizing factors are getting more substantial for the global oil and gas business.

1.2 Organizational Responses to Stigmatization

It is unlikely for large corporations to sustain their control over the market just by relying on their financial or lobbying capabilities without obtaining the consent of a wider group of actors (Levy & Egan, 2003). Piazza and Perretti (2015) stated the potential adverse effects of the stigmatization from social and economic sanctions to loss of legitimacy in stakeholders' eyes might urge stigmatized organizations to develop numerous strategies to cope with the disapproval they receive. Some of the remarkable approaches introduced by scholars for contested businesses can be named as impression management and defensive practice adoption techniques (Carberry & King, 2012; Piazza & Perretti, 2015), concealment tactics (Hudson & Okhuysen, 2009), asset divestment strategies (Durand & Vergne, 2015) and category straddling policies (Alexy & George, 2013; Vergne, 2012).

As Piazza and Perretti (2015) mentioned, most of the coping strategies are cosmetic in nature since their primary goal is to influence the perception of stakeholders through purely communication tactics rather than changing the underlying pattern of operations' core features, which give rise to the stigmatization in the first place. Nevertheless, as recognized by the same article, there are more substantial and concrete strategies introduced by organizations as well. The literature showed that firms can develop and implement drastic responses to distance themselves from the tainted company identity in the face of severe legitimacy loss. For that purpose, they can attempt to claim the membership of legitimate industries through category straddling (Alexy & George, 2013) or simply divest assets from socially disapproved fields (Durand & Vergne, 2015). In the context of this study, organizational or categorical boundaries of the oil and gas industry stand for all the stages of the sector's value chain, including exploration, production, refining and distribution activities. Thus, it can be inferred that companies may either utilize rhetorical stigma reduction tactics within the organizational boundaries of their controversial operations or prefer to go beyond the perimeters of their conventional practices with more radical and transformative methods.

It is noticeable that some of the organizational responses identified by the literature are also acknowledged and applied by the oil and gas businesses to reduce the amount of stakeholder pressure they encounter due to earlier mentioned unsustainable attributes of the field concerning climate change. The fossil fuel businesses initially reacted to this emerging threat with aggressive strategies. US-based corporations from the coal, oil, automobile, utility, and chemicals industries collaborated through industry associations, lobbied policymakers, questioned the science of climate change, and emphasized the high costs of mitigating GHG emissions to justify their activities (Levy & Egan, 2003). However, there

was an apparent shift in the following years regarding the positioning of organizations, and significant amounts of investments in low-emission technologies started to get promoted instead (Levy & Egan, 2003). The analysis of Abreu et al. (2021) revealed that pressure from policymakers, customers, suppliers, and competitors increased companies' tendency to adopt more transformative strategies to achieve a low-carbon economy. The same study also named various factors other than the societal demands, including regulatory structure, market positioning, and technological developments that can drive the shift towards the lower-carbon economy.

Despite the fact that earlier mentioned unequivocal effects of the climate crisis were becoming more apparent during the last decade, some promising developments also occurred in low carbon technologies, especially in renewable energy generation. World Resources Institute (WRI) emphasized the significant transition towards electricity production from renewable sources and away from fossil fuel options, which were encouraged by feasibility advancements of renewable energy technologies, including decreasing costs and enhanced utilization rates (Ge et al., 2019). The recent global status report of REN21 (2020), which is an international renewable energy community formed by various stakeholder groups, supported that clear shift by indicating that installed capacity of renewable power production surpassed net installations of fossil fuel and nuclear power capacity combined in 2019 for the fifth year in a row.

In the light of such developments, the growing interest of oil and gas companies in renewable energy production can be interpreted as a sign of a category straddling strategy for the industry. The energy outlook of BP (2019a), as an influential actor in multinational oil and gas business, affirms that transition by indicating renewables as the fastest-growing source of energy, contributing half of the growth in global energy supplies, and becoming the largest source of power by 2040 (p. 105). Members of a stigmatized category like the fossil fuel field may convincingly acquire features of morally approved categories such as renewables through straddling tactics and enhance their overall legitimacy as a result (Alexy & George, 2013).

On the other hand, the reliability of stigma reduction strategies is perceived as questionable for stakeholders since greenwashing, as a popular misleading strategy, is becoming quite controversial in the sector (Cherry & Sneirson, 2012). Considering that the societal expectations for organizational transparency have increased substantially in recent years, stigmatized businesses may participate in false transparency activities, such as greenwashing, to draw attention away from stigmatized attributes of their activities (Blithe & Lanterman, 2017).

1.3 Research Questions

The international community's scrutiny on the oil and gas industry is getting intensified as the targets to tackle climate change become more apparent for society. The 2015 Paris Agreement aims to enhance the global response to act on mitigating climate change by keeping the atmospheric temperature below 2 degrees and preferably under 1.5 degrees on a global scale compared to the pre-industrial levels (United Nations Framework Convention on Climate Change [UNFCCC], 2021). IPCC accentuates the significance of transformation in the energy industry to meet that overarching goal by highlighting the necessity for expanding the percentage of renewable energy supplies of electricity up to 70-85 % in 2050 (IPCC, 2018). IEA (2020b) indicated that the share of renewables in global electricity generation was 28% in the first quarter of 2020 while coal and gas were responsible for 60% of electricity supply, which emphasized the urgent need for a radical shift in fossil fuel industries towards renewables to meet with the IPCC's scenarios. Thus, identification of methods, which are utilized by the industry to confront the escalating stigma, is invaluable for adequate interpretation of the global energy transition trends towards the lower-carbon economy. Additionally, previous work of the academia has concentrated on acquiring positive evaluations of the society while a little research has been conducted regarding how to respond stigmatization (Vergne, 2012).

Consequently, this study addresses that theoretical gap and strives to increase the understanding of strategies implemented by the global and conventional oil and gas sector to reduce the immense moral disapproval associated with the GHG-intensive industry due to rising climate change concerns.

It is considered that concentrating on private sector disclosures would provide more insightful findings for this research in terms of identifying methods of the industry since these companies are regarded as more exposed to the legitimacy threats and market pressures than state-owned enterprises (Bae, 2014). In this context, private sector simply encompasses all for-profit entities that are not controlled by governments including publicly traded corporations. Liu et al. (2017) emphasized that government-owned businesses do not encounter the same market-based incentives as publicly listed companies for voluntary reporting of their social responsibility activities. Furthermore, state-owned firms do not employ private disclosure networks to publicize their climate change-related data to non-governmental stakeholder groups (Liu et al., 2017). It can be inferred that a low level of government pressure might cause such businesses to take a passive stance towards voluntary reporting (Bae, 2014).

Vergne (2012) indicated that more prominent representatives of stigmatized fields are likely to experience a higher level of condemnation since they symbolize the negative features credited to their category. The same study also underlined that situation by referring to McDonald's as the largest member of another tainted group, fast-food chains, and yet the most publicly criticized organization of the sector. As a result of this exceptional societal disapproval and

scrutiny, large companies are likely to expand the resources they are willing to dedicate to socially responsible activities (Abreu et al., 2021). Chih et al. (2010) supported this argument by underlining that such businesses are more committed to CSR activities, especially when the market competitiveness is perceived greater and there are opportunities to expand their competitive advantages. Thus, GHG reduction strategies of small-scale businesses can be merely discretionary while such decisions in large organizations are expected to be more thoroughly formulated as part of a comprehensive strategy (Abreu et al., 2021). Accordingly, sustainability and corporate social responsibility (CSR) reports of the top three most influential publicly traded oil and gas firms worldwide based on their revenues were examined by this study.

Moreover, Lee and Klassen (2016) emphasized that regulatory structures concerning climate change may vary significantly at the national level, from the implementation of strict public policies to limit GHG emissions to little or no legislative action. Companies with greater capabilities may respond to these uncertainties of the business environment by taking higher risks and carrying out proactive actions regarding the growing climate change threat. Global firms may cope with the political contestation with ease and take advantage of country-specific benefits of various locations, while local businesses can be adversely affected by complicated domestic political disputes (Pinkse & Kolk, 2012). Hence, the disclosures of multinational enterprises were preferred by this study as the main data for a more comprehensive analysis that is restricted less by the ambiguity of local political climate and regulations.

It was noteworthy that renewable energy generation rapidly emerged during the last decade and eventually achieved a record increase in 2019 by delivering the most outstanding contribution to growth in primary energy demand (BP, 2020). Thus, the data collection was performed for publicly released reports of the selected companies between 2010 and 2020 to evaluate if there were any meaningful signs for the deployment of transformative strategies by the oil and gas businesses as a response to advancements in the renewable energy technologies. It was also considered as a convenient time frame to assess the influence of the Paris Agreement and growing stakeholder demands on the climate change-related organizational strategies of the sector.

The content analysis approach was utilized for the collected data and designated period to gain a better insight regarding the stigma management techniques of the oil and gas business. The analysis adopted a fundamentally qualitative method for the initial coding process of the analysis which means interpretation of the researcher was applied to achieve informative findings. However, results were organized and introduced statistically in a quantitative manner to enhance the reliability of outcomes through the utilization of computer-aided software. Thus, ultimately, a mixed methodology was implemented by the research.

In the light of the information presented above, the following research question was designated by the study as the main task:

- What kind of organizational responses are introduced by the conventional and multinational oil and gas industry to cope with the intensifying stigma associated with the sector's contribution to climate change?

In addition, special attention was given to the supportive questions below:

- What kind of shifts are observed in the climate change strategies of the global oil and gas firms over the last decade?
- Are responses of firms based on purely symbolic strategies limited with the organizational boundaries, or are there signs of more substantial actions going beyond these boundaries?

2 THEORETICAL FRAMEWORK

Suchman (1995) defines legitimacy as an overall perception that the activities of an individual or an organization are beneficial or appropriate under some socially built structure of rules, principles, values, and meanings. Organizational legitimacy theory anticipates that companies will utilize any strategy they consider as necessary to maintain their legitimate business status with socially accepted goals (de Villiers & van Staden, 2006). It is a dynamic subject that may come in various forms based on pragmatic, moral, and cognitive aspects (Suchman, 1995). Consequently, by embracing an approach that identifies stigmatization as a profound illegitimacy status on the spectrum of moral evaluation, it can be suggested that organizational responses to stigma can be diverse as well (Hampel & Tracey, 2019). Strategies of companies facing with stigmatization may differ based on the severity of experienced stigma, media exposure, and the extent to which a company is a member of the tainted field (Piazza & Perretti, 2015). These considerations may be applied to the conventional oil and gas sector as well, which is classified as a core-stigmatized business by this study due to its severe contribution to climate change. For companies operating in this controversial field, external business environment and organizational capabilities can be named as other significant factors that heavily influence the adoption and execution of the climate action strategies (Lee & Klassen, 2016).

In the light of stated factors, companies in contested sectors may deploy symbolic or substantial strategies to reduce the societal disapproval they are receiving from scrutinizing stakeholder groups. Businesses may also simply prefer to avoid adopting any coping strategy and continue their activities with a "business-as-usual" approach until they determine that the institutional framework offers an adequate stimulus for them to respond (Abreu et al., 2021).

Classification of organizational responses to severe illegitimacy may vary within academia. Hudson (2008) categorized stigma reduction approaches of firms into three main methods with his renowned study, which are namely, specialist, hiding, and challenging strategies. Specialist tactics are rooted in operating in a limited number of fields while hiding methods based on avoiding the intense scrutiny of stigmatizing stakeholders, and challenging strategies simply mean confronting adverse evaluation of hostile audiences.

This study aims for revealing if supermajor oil and gas firms adopted strategies that extend beyond the core-stigmatized category of fossil fuel operations and involve transformative practices in line with the energy transition trend towards the lower carbon sources. Therefore, organizational boundaries of conventional oil and gas activities are designated as the primary criterion for the theoretical categorization of tactics developed by the selected companies throughout the last decade.

Accordingly, impression management approach is introduced by the research as a rhetorical tool for organizations to recover and manage their tainted reputation while carrying out their operations as usual. Defensive practice adoption is simply defined as implementation of corrective actions for controversial aspects of the oil and gas activities. On the other hand, radical strategies of category straddling and asset divestment approaches are recognized as methods that go beyond stigmatized core features of the sector. Category straddling is based on claiming membership of socially approved businesses and asset divestment means withdrawal from the contested operations. Thus, both methods demand firms to perform drastic practices outside of their usual line of businesses. The following table outlines the taxonomy of organizational responses and highlights some of the key features of examined strategies (Table 1).

Classification of Stigma Reduction Strategies Based on Organizational Boundaries		
Within Organizational Boundaries	Impression Management	Defensive Practice Adoption
	<ul style="list-style-type: none"> • Rhetoric and symbolic action adoption. • Denials, excuses, justifications, and explanations (Suchman, 95). • Concealment strategies for hiding the controversial aspects of operations (Hudson & Okhuysen, 2009). • Greenwashing tactics as manipulative communication strategies (Cherry & Sneirson, 2012). 	<ul style="list-style-type: none"> • Extends beyond being cosmetic actions (Carberry & King, 2012). • Corrective actions aiming for contested aspects. • Introduction of new practices and innovations to enhance legitimacy (Carberry & King, 2012).
Out of Organizational Boundaries	Category Straddling	Asset Divestment
	<ul style="list-style-type: none"> • Obtaining membership of multiple categories. • Diluting association with the core-stigmatized category (Vergne, 2012). • Authentically seek to incorporate as many attributes as possible of a legitimate category in their activities, or • Symbolically claim novel category features to improve public image (Alexy & George, 2013). 	<ul style="list-style-type: none"> • Disengagement from tainted features. • Substantial way to manage severe legitimacy loss (Durand & Vergne, 2015). • Can be challenging for core-stigmatized businesses. (Piazza & Perretti, 2015). • Media content and coverage can be decisive factors for divestment (Durand & Vergne, 2015).

Table 1. Classification of Stigma Reduction Strategies Based on Organizational Boundaries

2.1 Strategies within Organizational Boundaries

2.1.1 Impression Management

Companies can utilize impression management as a verbal strategy to respond to criticism of hostile audiences and advocate positive traits of their operations. The efficiency of such rhetoric approaches for stigmatized sectors can be uncertain since tainted organizations are experiencing exceptional social contestation, unlike legitimate companies (Durand & Vergne, 2015). Thus, it is possible to state that a high level of criticism targeting organizations can make impression management tactics simply ineffective for firms to enhance their severely damaged public image.

Suchman (1995) introduced various symbolic techniques to repair organizational legitimacy losses that are worth mentioning here as potential methods for companies to handle the stigmatization. Accordingly, businesses may offer denials, excuses, justifications, and explanations as impression management strategies. However, these strategies may lead to unwanted outcomes for organizations in some circumstances. For instance, if they are not genuine, rejections of public accusations may diminish the long-term legitimacy status of organizations (Suchman, 1995). Levy and Egan (2003) stressed that the initial reaction of the fossil fuel business to growing stigma was questioning the science of global warming through partnerships with peers and legislators, which can be interpreted as an effort to deny or underrate the severity of climate crisis. The field's attitude noticeably changed in subsequent years, and companies started to advocate their investments in emerging low carbon technologies (Levy & Egan, 2003). Departure from the denial techniques might be linked to the potential negative consequences of such strategies for the fossil fuel industry in the light of emerging science of climate change and increasing stakeholder awareness.

Companies may prefer to excuse their contested activities rather than denying them, which often implies accusing external factors (Suchman, 1995). The oil and gas sector can utilize this approach to underline the lack of adequate legislative structures, including carbon pricing policies, subsidies, and incentives to enable the energy transition. Lee and Klassen (2016) supported this condition by recognizing the unpredictability of legislations which fluctuate between public policies that encourage the adoption of low carbon solutions and no regulatory action in many developing countries. As a critical player in the global oil and gas market, ExxonMobil (2017) highlighted that success in developing and deploying lower carbon technologies would heavily depend on authorities building a stable policy environment that supports innovation and competition (p. 19). Nonetheless, in their earlier work, Levy and Kolk (2002) addressed ExxonMobil as one of the companies with the strongest stand in the industry against GHG regulations. The study of Abreu et al. (2021) underlined the risks for companies in relation to the uncertainties surrounding the GHG policies and how they will be enforced in the oil and gas industry. It can be argued that ambiguities in regulatory struc-

tures may cause considerable challenges for firms to anticipate future energy outlooks and develop a balanced strategic approach that is both resource-efficient and in line with the stakeholder demands (Abreu et al., 2021).

Nevertheless, Lee and Klassen (2016) stressed that organizational responses to the instability of the business environment might differ based on the company resources and readiness. Thus, they do not necessarily have to be treated as excuses for inaction. On the contrary, such uncertainties may enable businesses with vast capabilities to take greater risks and attempt to carry out proactive measures concerning the climate change problem (Lee & Klassen, 2016).

Furthermore, the type of impression management which concentrates on external factors as excuses for the poor climate change performance may be perceived by audiences as a deficiency in organizational control (Suchman, 1995). Therefore, businesses may seek to justify their activities rather than excusing them to avoid undesirable implications. For instance, BP (2019b), as another influential actor in the oil and gas scene, utilized the argument of increasing global energy demand to emphasize the requirement for a diverse range of supplies, including oil, gas, coal, and renewables in the future energy mix (p. 8).

Moreover, concealment of stigmatized attributes can be named as another widespread strategy for contested organizations to perform (Hudson & Okhuysen, 2009). Organizations may reduce their disclosures deliberately if they perceive them to be potentially more threatening than beneficial to retain legitimacy (de Villiers & van Staden, 2006). Therefore, conventional oil & gas companies may embrace that approach and simply restrict the publicly released information on their sustainability performances to refrain from any undesirable media coverage or attention of stakeholders. Deployment of hiding methods would be dependent on the aim of corporations in terms of seeking the active support or simply passive approval of their audiences (Suchman, 1995). If a company pursues certain stakeholder groups to not interfere in their activities, the required legitimation level may be perceived as relatively low (Suchman, 1995). Thus, for a business embracing this stance, concealment might be recognized as a viable method.

By applying the secrecy strategies, oil and gas businesses may abstain from declaring their contribution to climate change or implementing any mitigation measures to manage their carbon footprint. Instead, they may prefer to publicize statements that justify their conventional activities, as mentioned earlier. Although, considering the growth of societal expectations from controversial industries such as oil and gas, implementation of concealment techniques may signify the lack of transparency and result in further distrust of stakeholders and lead to considerable reputational losses for companies (Blithe & Lanterman, 2017).

Hence, as a response to this intensifying public pressure for transparency, businesses are becoming more committed to sharing detailed and precise carbon information regarding their products' life cycle and industrial processes (Lee & Klassen, 2016). Companies may also introduce "monitors" such as governmental agencies and compliant systems to enhance the credibility of their climate action performance (Suchman, 1995). For example, a prominent international company from the conventional oil and gas sector, Shell (2019), highlighted the activities

of their external assurance provider, which reviewed their Net Carbon Footprint claims from 2016 to 2019 (p. 41).

Greenwashing can be identified at this point as a controversial form of symbolic impression management strategy that organizations employ to appear more environmentally and socially responsible than they actually are (Cherry & Sneirson, 2012). Bae (2014) emphasized that greenwashing is a selective disclosure practice based on reporting only the socially approved information without revealing any undesirable activities. Accordingly, it can be stated that it is a deceptive way of communication with stakeholders which separates these practices from earlier mentioned concealment techniques.

Organizations may consider greenwashing as a rewarding strategy to avoid the moral disapproval of the external parties despite its risks. This misleading approach may backfire on companies with an intensified condemnation by the society if the media or other stakeholder groups expose unsubstantiated claims of firms. Cherry and Sneirson (2012) highlighted the intensity of greenwashing policies in the conventional oil and gas industry through the case of Chevron as a multinational and influential actor in the sector. The study highlighted that company claimed in its advertisements to prioritize the protection of the environment and the local communities where it operates. Nevertheless, they denied any obligation for the severe oil pollution created by their predecessor in the Ecuadorian Amazon, which was draining into water sources and heavily impacting the local health in the region.

Symbolic statements, especially manipulative ones such as greenwashing policies, may be perceived as exaggerated claims and ingenuine legitimation attempts by criticizing groups that may eventually lead to further scrutiny and societal disapproval for the companies (Ashforth & Gibbs, 1990).

Stigmatized companies are likely to collaborate with each other to enhance their impression management efforts. Blithe and Lanterman (2017) recognized this trend by emphasizing jointly constructed discursive practices of gun collectives to bond their members together. Since the categorical stigma concept refers to groups of organizations that are fields with matching undesirable characteristics (Piazza & Perretti, 2015), joining resources to develop tactics that restore industrial legitimacy may be sensible for such tainted firms. Accordingly, the fossil fuel industry initially responded to increasing stakeholder pressure related to climate change by objecting to the science behind it through industry partnerships (Levy & Egan, 2003). On the other hand, partnerships may transcend impression management's rhetorical aspect and be utilized for concrete actions. For example, collaborative practices such as engaging in and employing emission trading schemes may lead businesses to meet their GHG emission reduction ambitions at lower expenses (Lee & Klassen, 2016). Abreu et al. (2021) underlined the significance of partnerships to create an adequate environment for low carbon technological innovations to advance.

2.1.2 Defensive Practice Adoption

Even though symbolic actions are considered as prevalent strategies for stigmatized businesses to lessen the unwanted attention of stakeholder groups, organizational responses to the condemnation within the perimeter of the conventional oil and gas activities likely to extend beyond the rhetorical aspect and contain defensive practice adoption methods (Carberry & King, 2012). Consequently, this study defines impression management as a symbolic communication effort of morally tainted organizations to reduce the intensity of societal disapproval, and defensive practice adoption is recognized as an approach to support that goal by introducing new internal practices or improving the existing ones.

By implementing a defensive action, firms can simply emphasize that stigmatizing claims related to their activities are unfounded or the contested features are simply irregularities or are getting resolved (Carberry & King, 2012). Companies can selectively admit that certain features of their activities are faulty and take corrective actions accordingly to fix those particular flaws (Suchman, 1995). Although integrating this method to core-stigmatized businesses would not be expected to reduce severe condemnation of stakeholders effectively. Since societal disapproval is inherent in fundamental attributes of such companies, it would be challenging to single out a specific aspect of operations (Hudson, 2008).

Novel activities should be deeply linked to the perceived deviation for defensive practice adoption strategies to influence audiences' viewpoints (Carberry & King, 2012). Thereby, oil and gas firms develop such practices to reduce their carbon footprint and cope with climate change-related stigmatization. Enhancing operational efficiency, upgrading production methods, and advancing lower-carbon products can be identified as some of the common approaches for organizations to consider while developing their climate action plans (Abreu et al., 2021). Businesses may focus on undertaking incremental developments through such practices in their existing processes and products or prefer to introduce drastic innovations to achieve more ambitious reduction targets (Lee & Klassen, 2016). Accordingly, oil and gas companies utilized several innovative measures such as carbon capture, use, and storage (CCUS) technologies or natural climate solutions (NCS), which are attempts of the sector to develop carbon-neutral fossil fuel products (BP, 2019b; Shell, 2019). Similarly, climate change activists raised the tendency of oil and gas firms to introduce carbon dioxide injection as an enhanced oil recovery technique in the US to mitigate their GHG emissions (Hiatt et al., 2015). Implementation of such innovations heavily depends on businesses' organizational learning capabilities, which implies to creation, distribution, and utilization of new knowledge (Lee & Klassen, 2016).

Employment of the emerging lower carbon technologies as a defensive strategy can be integrated into the two-stage model of diffusion research, which suggests that initial adopters seek to achieve technical or financial benefits from a new practice, while later adopters try to enhance their legitimacy as a practice grow into institutionalized action (Carberry & King, 2012). On the other hand, Kennedy and Fiss (2009) addressed that legitimacy concerns can be applicable for early adopters as well. The research indicated that early adopters do not just

gain economic advantages but also improve their social status, while later adopters mainly focus on avoiding potential technical and reputational losses. Thus, embracing promising lower carbon technologies can present financial benefits to oil and gas companies while simultaneously reducing the sector's stigmatization. Following the Enron scandal, Carberry and King (2012) stressed that adopting the stock option expensing (SOPEX) as a defensive accounting practice was highly valuable for early adopters to cope with the stigmatizing threats.

Nonetheless, the study revealed that after a greater group of companies deployed the tactic, the capability of adoption as a distinctive defensive tool diminished. As an additional critical insight from the research, it can be highlighted that since the SOPEX adoption decreased firms' commercial revenues, it may just enhance the credibility among stakeholders more than less costly actions of rhetorical defences. Therefore, it is possible to indicate that companies may even consider adopting new practices which would risk initial financial losses in the face of the severe threat of illegitimacy. Organizations may benefit from such opportunities by utilizing defensive practice adoption to legitimize their controversial oil and gas operations or claiming membership of emerging renewable energy fields by embracing the more drastic approach of category straddling.

Suddaby and Greenwood (2005) emphasized that innovations may create separate cognitive legitimacy concerns for businesses since certain stakeholder groups may perceive new practices as less reliable than institutionalized ones regardless of their potential technical or social benefits. However, the same study underlined that shifts in society's perception might eventually result in the approval of new activities that may sustain them as legitimate practices. Earlier mentioned impression management strategies may be used as communication tools to secure that transition of the reasoning within the targeted audiences.

The public's environmental consciousness is increasing, and stakeholders are getting more demanding for companies to act proactively to tackle environmental problems (Abreu et al., 2021). Correspondingly, societal awareness concerning the climate change problem is rising while adverse outcomes of this global crisis are becoming more noticeable. Hence, it can be argued that innovations for GHG reductions can be integrated into fossil fuel activities as practical stigma management tools without concerns about the cognitive barriers of the society.

2.2 Strategies out of Organizational Boundaries

2.2.1 Category Straddling

Category straddling can be identified as a transformative stigma reduction strategy centred on obtaining membership of legitimate fields to dilute organizations' association with stigmatized features. There are several potentially negative consequences of the category straddling on businesses as addressed by the previous literature. Hsu (2006) highlighted that targeting more categories may draw greater audiences, although it may be cognitively less attractive for stakeholders. The research concentrated on the movie production industry and revealed that multi-genre films are challenging for viewers to comprehend, which leads to poor match up with the preferences of the audience and decreases the overall appeal. Negro, Hannan, and Rao (2010) supported this argument by claiming that straddling reduces categorical contrasts and blurs boundaries, creating less meaningful social identities. Consequently, such attempts may overstrain audiences' evaluation capability and make it challenging for them to categorize organizational identities (Zuckerman, 1999).

Nevertheless, in the special case of stigmatized industries, effects of the category straddling strategies may need to be reconsidered (Alexy & George, 2013). Vergne (2012) emphasized that diversified organizations such as Boeing, a prominent arms producer, and a commercial aircraft maker, utilized category straddling to distance themselves from core-stigmatized category of weapon manufacturing. Consequently, they received less criticism than arms specialists like Lockheed Martin. It is a common practice for multinational oil & gas companies to participate in renewable energy production. Hence, category straddling may be perceived as a viable option by the industry to cope with the growing controversy around substantial GHG emission levels of fossil fuel activities. For example, BP (2019b), as an influential oil and gas company, expanded its stake in Lightsource, a developer of large-scale solar projects, to create a joint venture. Similarly, Shell, another multinational actor of the sector, also emphasized their rising interests in wind power production (Shell, 2019). Accordingly, these supermajor organizations may prefer to promote their ongoing investments in renewable energy production while disclosing their sustainability performances to diminish societal disapproval.

Feasibility advancements in alternative energy production can also be deemed a major element for such activities to be perceived by diverse stakeholder groups as not only environmentally friendly but also more dependable and affordable options than before. For instance, International Renewable Energy Agency (IRENA, 2016a) anticipates that by 2025, cost reductions can be observed in solar photovoltaics (PV) up to 59%, concentrating solar power (CSP) by up to 43%, onshore and offshore wind power systems by 26% and 35%, respectively (p. 10). Moreover, IRENA (2016b) underlines the benefits of the renewable energy transition to the global economy by stating that; "Doubling the share of renewables in the energy mix by 2030 would increase global GDP by up to 1.1 percent,

improve welfare by up to 3.7 percent and support over 24 million jobs in the sector. "(p. 77).

In the light of such advances, the illegitimate practice of burning fossil fuels can be regarded as a more controllable activity than before by stakeholders. Controllability of an illegitimate activity can raise audiences' tendency to recognize an overall inconsistency between theirs and stigmatized companies' morals (Devers et al., 2009). Subsequently, increasing distance between values can intensify the experienced disapproval for oil and gas firms (Hudson, 2008). Therefore, the emergence of renewable energy technologies can be considered an indirect but significant contributor to stigma in the oil and gas field and an essential driver for adopting category straddling or even asset divestment strategies.

In addition, stigmatized businesses that utilize a straddling approach may either authentically seek to incorporate as many attributes of a legitimate category in their activities as practicable or symbolically claim to improve their public image (Alexy & George, 2013). Thus, it can be inferred that organizations may attempt to conceal the stigmatized features of their operations and deviate themselves from a contested field by using the straddling method in a purely symbolic manner.

2.2.2 Asset Divestment

Suchman (1995) introduced "disassociation" as a restructuring strategy for organizations to symbolically dissociate themselves from immoral aspects of their operations. Nevertheless, merely separating themselves from specific contested activities through mostly cosmetic actions may not be a useful approach to cope with stigmatized organizations' exceptional stakeholder pressure. In such circumstances, organizations may prefer asset divestment as a substantial way to manage severe legitimacy loss rather than utilizing impression management strategies (Durand & Vergne, 2015).

Durand and Vergne (2015) claim that firms can differentiate themselves from the contested field through disengagement from the controversial activities and reduce their dependence on a tainted peer group. However, if the involvement in a stigmatized category is considered integral to the organization's aim, firms might hesitate to disengage from central activities and prefer to cope with stigma by other means, such as symbolic practice adoption (Piazza & Perretti, 2015).

Therefore, as per the classification of Hudson (2008), it can be more challenging for companies to manage core-stigma through asset divestment strategies since such firms encounter hostile audiences targeting the fundamental attributes of their activities. Nevertheless, there are cases in which firms implemented this approach and disengaged from heavily stigmatized activities. For example, Motorola allegedly divested its defence business due to the negative media attention it received (Vergne, 2012). Therefore, in the face of profound legitimacy loss associated with the industry's core features, firms may entirely abandon their contentious business fields.

There are noticeable hints of divestment strategies occurring in the oil and gas sector as well. In 2015, Shell declared the cancellation of the Alaska exploration project and the heavy oil operations in Canada (Shell, 2015). Also, the company underlined their overall GHG emission reduction achievements in relation to their asset divestment decisions. Thus, the firm employed disengagement tactics to reduce the stigmatization linked to the high-carbon impact of their fossil fuel activities.

Carmichael and Brulle (2018) revealed that media treatment of climate change has a significant impact on public opinion. The research emphasized that since some of the stakeholders do not hold unified and strong opinions on activities that are perceived as immaterial for their daily concerns, their ideas are mainly shaped by the latest information that they have been presented on the topic. Hence, increased media attacks on peers are expected to pressure businesses to divest assets from condemned industries (Durand & Vergne, 2015). Climate change-related media coverage grew fivefold during the new millennium's first decade (Boykoff, 2010). Therefore, increasing media exposure of leading conventional oil & gas companies about their climate change contribution may trigger remaining firms in the same field to shift towards lower carbon businesses such as renewable energy production. On the other hand, as the amount of information in the media increases regarding the denounced category, the tendency of organizations to disengage from their activities can decline due to cognitive limitations of audiences facing information overload and the effects of adaptation to a repetitive impetus (Piazza & Perretti, 2015). Accordingly, the tainted organizations' reactions to the media coverage may differ based on the content and volume of available information.

3 DATA AND RESEARCH METHOD

3.1 Data

This study strives to identify organizational strategies adopted by the conventional oil and gas industry to cope with the intensifying societal disapproval concerning the field's adverse contribution to the climate change crisis. Therefore, the top three largest transnational companies operating in the private sector were selected for the analysis based on their revenues in 2019 (Buchholz, 2020). This section aims to shed further light on details about the collected data content of the research, including selection criteria.

Climate change is an environmental problem with potentially catastrophic outcomes at the global magnitude as per the recent IPCC reports and expectations from governments to consolidate the international response to this severe threat is rising in the light of The Paris Agreement. Hence, companies that operate on a global scale were selected by this research with the aim of revealing their climate strategies in the face of growing demands of the international community for urgent transition to low carbon economy.

As integrated businesses, operations of the chosen firms encompass every stage of the conventional oil and gas industry's value chain, including upstream, midstream, and downstream activities. Thus, these supermajor corporations symbolize all the undesirable attributes of the tainted field, and consequently confront with an intensified level of stigma (Vergne 2012). Their immense organizational capabilities allow them to respond that condemnation by devoting higher amounts of resources to enhance their legitimacy status (Abreu et al., 2021).

Following the selection of multinational organizations with the highest profits owing to the earlier mentioned reasons, the next step was to determine whether concentrating on public or private sectors. According to the data of Statista, as a company that is specialized in market and consumer statistics, there were several state-owned businesses from China and Saudi Arabia listed among the world's leading supermajor oil and gas companies of 2019 as per their annual revenues (Buchholz, 2020). It was noteworthy that, while PetroChina is classified as a public company, its parent firm, China National Petroleum Corporation (CNPC), is one of the major state-owned businesses of the country. Therefore, the firm was considered as a government-owned organization fundamentally by this research.

Government-controlled organizations can be identified as exceptional cases due to their unique business environment. First, the aforementioned regulatory pressures in relation to climate change policies may not be applicable for such legal entities. Bae (2014) underlined that state-owned organizations might be exempted from the enforcement of regulations and market competition. On the

other hand, businesses in the private sector may experience rigorous public policies and growing market pressure, encouraging them to practice voluntary disclosure strategies for their environmental performances. Hence, publicly traded oil and gas companies were selected by this study for analysis due to their willingness to disclose their climate change performance.

In addition, the adoption of new managerial practices can be lagged in state-owned companies, while it is more likely for businesses operating in the private sector to be influenced by innovative developments (Boyne et al., 1999). One of the primary objectives of this study is to discover developments concerning the introduction of emergent low carbon technologies, including renewable energy production, by the conventional oil and gas industry as a sign of transformative stigma reduction strategy. Consequently, organizations that operate in private sector were recognized as adequate businesses for this research to deliver detailed inferences regarding the energy transition trends towards the low carbon alternatives.

In consideration of the above-mentioned criteria, the top three highest-ranked multinational and publicly traded oil and gas firms were designated for the analysis, which are named as Shell, BP, and ExxonMobil, respectively (Buchholz, 2020). The number of chosen companies was limited to three since this study's nature demanded an in-depth and repetitive examination process as a content analysis with qualitative features (Lichtman, 2014). Nevertheless, it was still considered reasonable to provide meaningful insights for the study's research questions due to the influence level and financial capabilities of the selected supermajor organizations.

Besides the legitimacy concerns, it would motivate publicly listed businesses towards further voluntary disclosures to achieve financial advantages if shareholders are perceived as eager to pay a premium for companies committed to climate change action (Bae, 2014). Accordingly, both Shell and BP collaborated with As You Know, which is a non-profit organization that encourages environmental and social corporate responsibility through shareholder advocacy, and they supported shareholder resolutions calling for a commitment to mitigate GHG emissions and invest in renewable energy sources (Schreiber, 2015). ExxonMobil released its latest five-year plan to reduce GHG emissions just a week after the socially responsible investor groups targeted the company for failing to deliver long-term energy transition demands towards the lower carbon economy (Rosenbaum, 2020). Such examples highlight the rising scrutiny of shareholders on the publicly traded global oil and gas companies to report their climate change commitment. Hence, it was concluded that disclosures of selected businesses could provide valuable findings for this study.

After selecting BP, Shell, and ExxonMobil as corporations to examine, the data type had to be identified as the next phase of the study. Content analysis is a technique that can be utilized for all sorts of texts derived from a variety of sources (Bengtsson, 2016). Publicly released annual sustainability and CSR reports of the designated companies were collected as the main data by this research. Deegan (2002) highlighted that disclosure of such information, which involves climate change performance, can be utilized for legitimizing purposes by

companies. Voluntary CSR reporting can play a central role specifically for stigmatized businesses to divert scrutiny of stakeholders from their contentious practices, minimize the adverse outcomes of stigmatization and defuse the impacts of potential lawsuit trials (Grougiou et al., 2016). Thus, they were acknowledged as convenient documents to examine firms' organizational responses to the climate change-related condemnation of the industry. Each company's respective websites and the sustainability disclosure database of Global Reporting Initiative (GRI) were used as primary sources to gather the publicly available data.

Subsequently, sustainability reports of the chosen organizations published during the last decade were collected for examination. As mentioned earlier, it was a time frame that severe outcomes of climate change became more evident than ever which led to massive strikes and protests of climate activists around the globe (Taylor et al., 2019). On the other hand, promising advancements kept occurring in low carbon technologies throughout the decade. Hence, it was considered as an appropriate time span to assess the potential indications regarding the adoption of transformative strategies by the oil and gas industry as a result of intensifying external pressures and opportunities.

It was also a period that allowed the research to emphasize the effects of recent regulatory developments related to climate change disclosure. Several nations have already launched compulsory reporting laws for GHG emissions of companies, including the countries where the selected businesses of this study are originated from. For example, GHG emissions of large corporations need to be disclosed yearly basis to the Environmental Protection Authority in the US, and recently the UK became the first nation to make it mandatory for all publicly traded businesses to share GHG emissions in their annual reports (Liu et al., 2017). The introduction of such ambitious regulatory frameworks may raise stakeholder consciousness and pressure on the oil and gas companies regarding their contribution to climate change (Abreu et al., 2021). As Levy and Egan (2003) mentioned, public policies may be influenced by the demands of stakeholder groups in return. Hence, it can be argued that both governments and other stakeholder groups, including consumers, non-governmental organizations (NGOs), and investors, may affect each other's perception of the controversial activities and intensify the societal disapproval of tainted industries. Consequently, organizations may expand their reporting activities to not suffer from the legitimacy loss due to the growing scrutiny of the society (Deegan, 2002). Private sectors may also utilize voluntary disclosure as a proactive action when they predict that further regulations on GHG emissions are on the way (Bae, 2014). Thus, impacts of the regulatory pressures on climate change-related reporting may not be limited to the existing mandatory disclosure laws.

Even though academia generally anticipates a shift towards more detailed and more accurate reporting for the future because of the previously mentioned intensifying societal demands, under certain circumstances, the change in the type of disclosures may arise in the opposite direction as well (de Villiers & van Staden, 2006). Accordingly, legal enforcement may not always encourage companies to disclose their controversial activities; on the contrary, some firms can

deliberately reduce their publicity on climate change topics once the legislative pressure is strengthened. For example, the GHG reporting scheme's introduction and the carbon tax policies in Australia eventually decreased the number of environmental disclosures of government-owned companies (Liu et al., 2017). Therefore, firms may choose to withhold the information they disclose once they perceive that rising societal awareness can cause harm to their legitimacy status (de Villiers & van Staden, 2006). This type of approach can be interpreted as an earlier mentioned concealment strategy within the theoretical framework of organizational stigmatization (Hudson & Okhuysen, 2009). Through the content analysis of the company disclosures that were released in recent years, this study also intended to reveal if there were any signs for secrecy tactics adopted by the oil and gas businesses in climate change-related activities.

The frequency of examined sustainability reports was designated as every other year by this research. Thereby, it was initially planned to analyze five reports from each of the selected organizations, released throughout the designated time frame. The most recent disclosures of BP and Shell were released for the year 2019; hence, it was assigned as the final report year for the data collection to highlight the latest possible strategies of the industry regarding their organizational responses. However, since it was detected that ExxonMobil did not publish its annual report for the year 2019 during the analysis process, it had to be excluded from the study. Consequently, four reports of the firm were addressed instead of five, which made fourteen reports to analyze in total.

The following table summarizes all the data selection criteria explained above, including company forms, content types, and time frame of the study, along with justification of each decision (Table 2).

DATA SELECTION CRITERIA		
COMPANY SELECTION CRITERIA		
MULTINATIONAL ORGANIZATIONS	HIGHEST REVENUES	PRIVATE SECTOR
<ul style="list-style-type: none"> • Multinational firms allow study to grasp global megatrends for the organizational responses to stigma. • Global companies may respond to uncertainties of regulatory structures by taking larger risks and carrying out proactive actions (Lee and Klassen, 2016). • Multinational businesses may manage the political contestation with ease and take advantage of country specific benefits while local businesses can be adversely affected from the domestic political disputes (Pinkse & Kolk, 2012). • Global businesses are more committed to CSR activities, especially when the market competitiveness is perceived greater and there are opportunities to expand their economic advantages (Chih et al., 2010). 	<ul style="list-style-type: none"> • Prominent organizations tend to confront with an intensified level of stigma since they symbolize undesirable attributes of tarnished categories (Vergne, 2012). • Larger companies are more likely to dedicate higher amounts of resources to enhance their legitimacy status (Abreu et al., 2021). • GHG reduction strategies of small-scale businesses can be merely discretionary while such decisions in large organizations are more thoroughly formulated as part of an extensive strategy (Abreu et al., 2021). • Stigma reduction strategies adopted by such businesses are expected to reflect explicit signs for the conventional oil and gas industry's approach on the climate change. 	<ul style="list-style-type: none"> • Private sector may experience rigorous public policies and intensified market pressure which may encourage them to practice voluntary disclosure strategies (Bae, 2014). • State-owned businesses do not encounter the same level of market-based incentives for voluntary reporting of their sustainability related activities (Liu et al., 2017). • State-owned enterprises do not utilize private disclosure networks to publicize their climate change-related data to stakeholder groups (Liu et al., 2017). • Adoption of new managerial practices can be lagged in state-owned companies while businesses operating in private sector tend to be influenced by innovative low carbon technologies (Boyne et al., 1999). • Liabilities of publicly traded organizations in terms of accountability and transparency is a driving factor to develop effective strategies.
EXAMINED CONTENT- SUSTAINABILITY AND CSR REPORTS		
<ul style="list-style-type: none"> • Sustainability and CSR disclosures, which involve climate change performance, can be utilized for legitimizing purposes by companies (Deegan, 2002). • Voluntary reporting can play a central role for stigmatized businesses to divert scrutiny of hostile audiences from tainted practices, minimize the adverse outcomes of societal disapproval and defuse the impacts of potential lawsuit trials (Grougiou et al., 2016). 		
TIME FRAME OF THE STUDY - 2010 - 2020		
<ul style="list-style-type: none"> • Severe outcomes of the climate change became more evident than ever. It was the single warmest period on record (Brown, 2020). • Societal expectations from the contested fields increased considerably which led to intense demonstrations across the globe in 2019 (Taylor et al., 2019). • Gravity of the climate change impacts consolidated the influence of stakeholder groups at industry level (Levy & Egan, 2003). • World Resources Institute (WRI) emphasized the transition towards the electricity production from renewable sources and away from the fossil fuel options which were encouraged by feasibility advancements of renewable energy technologies (Ge et al., 2019). • Installed capacity of renewable energy production surpassed net installations of fossil fuel and nuclear power capacity combined in 2019 for the fifth year in a row (REN21, 2020). • An appropriate time span to evaluate the reflections of 2015 Paris Agreement on the organizational behavior. • Adequate period to evaluate the regulatory developments in relation to the climate change disclosure. Several nations have already launched compulsory reporting laws for GHG emissions of companies (Liu et al., 2017). 		

Table 2. Evaluation of Data Selection Criteria for the Research

3.2 Method

Following the collection of the publicly available data from the respective websites of the selected companies and the sustainability disclosure database of GRI, a content analysis was carried out to reveal the strategies adopted by the organizations throughout the last decade to cope with the climate change-related societal disapproval of the conventional and global oil and gas sector. Even though fundamentally a qualitative approach was utilized by this research and accordingly, statements of organizations were categorized based on the researcher's interpretation, results of the analysis were organized and presented numerically in a quantitative manner. QDA Miner Lite was employed as a computer-assisted content analysis software to achieve this task efficiently. Therefore, the study integrated qualitative and quantitative techniques with a mixed methodology. The main idea behind this method is that such integration allows a more thorough and synergistic use of data than utilization of a single approach (Wisdom & Creswell, 2013).

Implementation of an essentially qualitative method to assess the raw data was deemed a convenient choice for the research's inductive aspect (Lichtman, 2014). Inductive thinking can be identified as an approach to develop inferences from the collected data by integrating the new information into existing theories (Bengtsson, 2016). It can be indicated that qualitative research concentrates on the theory-building aspect by embracing the inductive reasoning method, while quantitative research likely to emphasize testing existing hypotheses with a deductive thinking approach (Hair et al., 2016, p. 296). Accordingly, employment of an inductive technique allowed this study to highlight critical themes in climate change-related activities of the conventional oil and gas field by reducing the data to a set of categories and, consequently, assessed these results in the light of the theoretical structure of stigma reduction strategies to construct a new grounded theory.

The content analysis aims to derive meaning from the collected data and deliver valid inferences (Bengtsson, 2016). It was considered that adopting such an approach as the main research methodology presented certain advantages regarding the research topic of this study as it allowed gathering information in the selected organizations' own statements. It is an unobtrusive technique by nature since there is no interaction between the chosen companies and the researcher which means firms cannot be influenced by any practices related to the data collection process (Hair et al., 2016, p. 197). Owing to the implementation of this method, it was possible to address organizational strategies regarding the management of moral disapproval by directly reviewing voluntary disclosures of selected firms in an unbiased manner. Moreover, content analysis was regarded as an adequate method to distinguish the organizational changes that occurred during the designated time frame of the study since the companies' former disclosures were publicly available to collect and examine.

The oil and gas industry utilized a variety of pertinent reporting standards for their voluntary sustainability disclosures. Accordingly, examined companies recognized frameworks like International Petroleum Industry Environmental Conservation Association (IPIECA) and Global Reporting Initiative (GRI) as their disclosure standards. However, the contents of each firm's sustainability report still varied significantly due to their voluntary nature. Thus, the researcher's interpretation was employed to attain more coherent and in-depth findings that could be integrated into the theoretical framework of the stigma management strategies. Supporting this process quantitatively by applying the computer-program assistance accelerated the analysis phase through organizing the data together in identified categories (Bengtsson, 2016). It also allowed the study to detect leading organizational responses to social contestation, significant changes in the company strategies throughout the time frame of the research, and company-based disparities to cope with the climate change-related stigma, based on the occurrence rates of the codes within the collected data. Application of such mixed methodology was regarded as an ideal approach to deliver more scientifically sound and transferable findings (Ivankova & Wingo, 2018).

Qualitative analysis was commenced with identifying sentences and paragraphs related to the research topic within the collected data and deriving "meaning units" out of them (Bengtsson, 2016). Therefore, initial data was scaled down to a more manageable size for further examination. This stage's main goal was to reduce the data content without rejecting any potentially valuable information that might be relevant to research questions (Hair et al., 2016, p. 303).

Following the assignment of codes for recurring meaning units, they were grouped to form categories and sub-categories. For example, while collaboration efforts regarding the climate change action were introduced as a popular category for all the selected companies, organizations' engagement activities with each of the individual stakeholder groups including NGOs, competitors, policy-makers, research organizations, and customers were coded as sub-categories, respectively. That way, not only the phenomenon of collaboration activities was addressed but also in which forms they occurred were covered by the study. On the other hand, stand-alone codes did not require any further sub-categorization, such as promoting energy and fuel efficiency or growing lower-carbon products for customers, which were placed directly under the main category of climate change. During that stage, the codes were constantly compared against one another for possible similarities and disparities, which was considered as a way to avoid any potential bias of the researcher and enhance the precision of the findings (Corbin & Strauss, 1990). Please see Appendix A for the Code Retrieval Sheet, which encompasses all the meaning units along with their assigned codes and categories.

After the category building phase, the most frequent categories based on the occurrence of words within the overall data set were identified as the most prominent and evident climate change strategies of the studied companies and displayed through various tables and charts. Please see Appendix B for overall coding frequencies that contain detailed information, including the number of

reports in which the codes appear and overall repetition rates of the codes and words.

Furthermore, the interrelation of categories was also assessed by the study to achieve comprehensive results and build a grounded theoretical explanation. (Corbin & Strauss, 1990). Hair et al. (2016) stressed that drawing conclusions entails determining the meanings of introduced themes and patterns and how they provide responses to the research questions (p. 308). Accordingly, inferences were disclosed by this research in consideration of the theoretical framework of organizational stigma management. For instance, codes like promotion of the energy and fuel efficiency advancements or mitigation measures for the operational GHG emissions were interpreted as signs of the defensive practice adoption (Carberry & King, 2012). On the other hand, investment in renewable energy generation was considered as an indication of the transformative approach of category straddling (Vergne, 2012).

In contrast to the manifest analysis, which uses participants' statements in a straightforward manner, latent analysis is a method that requires the researcher to evaluate the data to some degree to expose concealed meanings of the studied text (Bengtsson, 2016). Accordingly, in-depth examination of the findings to reveal underlying patterns of the stigma reduction strategies can be recognized as a latent analysis approach adopted by this research. It can also be stated that a postpositivist stance was embraced since an objective reality was sought through the interpretation of the researcher in line with the context of organizational responses to societal disapproval (Hair et al., 2016).

The latent analysis's qualitative aspect led to a dynamic and flexible process unlike solely quantitative methods, which implied that examination of the data evolved as the research progressed (Lichtman, 2014). Since coding schemes were designed inductively, they were altered throughout the analysis, as further data were introduced by the collected texts (Bengtsson, 2016). Consequently, whenever a novel category was discovered during the assessment, all the data were recoded and updated accordingly to achieve coherent results. Hence, it was an overall iterative and labor-intensive process. As a result of this exhaustive nature of the qualitative content analysis, a small number of settings are usually examined by research that employs this methodology (Lichtman, 2014). Correspondingly, this study's data collection was limited with disclosures of the top three leading multinational companies of the oil and gas field to achieve a deeper understanding of the organizational behavior in the context of climate change-related stigmatization.

In addition, trajectories of the identified stigma management tactics within the selected time frame of the research were examined through the utilization of computer-aided software. Therefore, it was possible to analyze meaningful trends throughout the last decade and highlight organizational strategies which were gaining popularity among the designated businesses in recent years or, on the contrary, losing their magnitude due to intensified external pressures. Please see Appendix C for the comprehensive year-based analysis results, which comprises figures that emphasize shifts within the industry and compare them with

other relevant strategies as well. Even though qualitative methods are often associated with themes and narrative only, by using the numerical elements of the quantitative approach, this study managed to provide statistical results as well to enhance the credibility and depth of inferences (Lichtman, 2014).

Lastly, the research provided company-level analysis results to differentiate the organizational responses developed by BP, Shell, and ExxonMobil as supplementary information. Please see Appendix D for the overall findings of the company-based analysis.

4 RESEARCH FINDINGS

Implementation of the content analysis delivered significant insights concerning the adoption of both cosmetic and substantial organizational responses by the global oil and gas companies to cope with the climate change-related stigma.

A comprehensive review of prevailing codes is carried out in the following section. Key findings are highlighted based on the occurrence rates of the codes within the examined texts. The ratio of coded words is considered as the main numerical criterion to reveal the prominent climate change arguments used by the selected companies throughout the designated timeframe. Accordingly, the most recurring codes are presented by this section in the order of the table given below (Table 3).

It is briefly explained under which stigma management strategies the featured statements of the studied firms can be classified in line with the earlier described theoretical framework. Therefore, it was possible to evaluate whether the implemented strategies were based on rhetorical arguments or they contained transformative actions extending beyond the categorical perimeters of the conventional activities.

Substantial shifts in the organizational behavior that occurred during the time span of the analysis are also highlighted and supported with figures. Hence, it should be noted that some of the codes that are not introduced by the following table are still addressed by this section if they imply a meaningful change in the industry's climate change policies.

Furthermore, the interrelation between relevant codes is stressed to draw more exhaustive and reliable inferences. Comparative graphs are added to the section to this end.

Finally, major disparities among the examined businesses in terms of their approaches to climate change-related societal disapproval are underlined as additional information.

THE MOST RECURRING CODES 2011-2019			
No	Codes	Number of Words ^a	% Words
1	Overall Collaborations for Low Carbon Future ^b	23225	4,80%
2	Overall Innovations for Low Carbon Future ^c	19034	4,00%
3	Mitigating operational GHG Emissions	14660	3,10%
4	Tracking and Reporting GHG Emissions	14590	3,00%
5	Promoting Energy/ Fuel Efficiency	14374	3,00%
6	Investments in Renewables	12274	2,60%
7	Natural Gas Investments	11772	2,50%
8	Reporting Climate Action Performance	11433	2,40%
9	Achievements for Low-Carbon Future	9349	2,00%
10	Company Energy Outlook Scenarios	8968	1,90%
11	Collaborations with NGOs and Initiatives	8698	1,80%
12	Supporting Low Carbon Public Policies	7878	1,60%
13	Growing Lower-Carbon Products for Customers	7567	1,60%
14	Contribution to Climate Change and Increased GHG Emissions	7461	1,60%
15	Commitment to Energy Transition towards Low Carbon Economy	7370	1,50%

a. Total number of coded words counted within the examined texts.
b. This code addresses overall collaboration efforts of companies regarding the climate change action. Engagement activities with different stakeholder groups are addressed by separate sub-codes.
c. This code addresses general low carbon innovations and technological advancements which are promoted by firms. Separate sub-codes are also created for advocated innovations occurred in various fields.

Table 3. Top 15 most recurring codes revealed by the content analysis based on the frequency of words within organizations' examined reports.

4.1 Climate Change Partnerships

The content analysis revealed that organizations constantly emphasized their commitments to engage with various external stakeholder groups and enhance climate action through joint research projects, product development programs, public policies, and alliances such as the Oil and Gas Climate Initiative (OGCI). Supermajor firms underlined the requirement for the joint effort of the society to overcome the intensifying climate crisis. Statements that feature such partnerships are coded by the research as *Overall Collaborations for Low Carbon Future* which stand out as the most prominent approach among studied corporations.

Sub-codes under the overall collaboration efforts of businesses are distributed as presented in the pie chart below (Figure 1). Accordingly, the most prominent engagement approach is identified as the *Collaborations with NGOs and Initiatives* by the content analysis. This sub-code encompasses companies' partnerships with non-governmental organizations, initiatives, and trading associations on climate change-related issues. These initiatives can be either in the form of an oil and gas industry alliance or bring together diverse stakeholder groups. Other collaboration themes frequently stressed by the firms were *Collaborations with the Industry Peers*, *Collaborations with Other Companies*, *Collaborations with Governments and Regulators*, and *Collaborations with Research Organizations*.

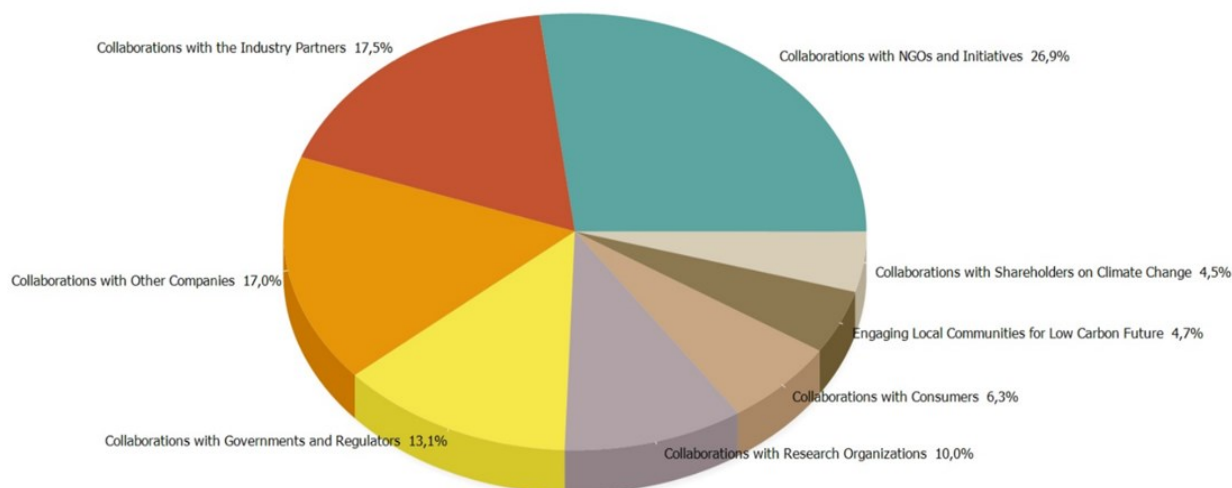


Figure 1. Distribution of Companies' External Collaboration Efforts

The literature recognized that stigmatized organizations tend to cooperate with each other to improve their legitimacy status. For instance, gun collectives are likely to build joint discursive practices to unite their members and cope with the sector's severe contestation (Blithe & Lanterman, 2017). The fossil fuel industry is known for its initial denial approach towards climate change science by collaborating through various industry partnerships (Levy & Egan, 2003). However, this research revealed that the studied companies' engagement efforts were mainly

concentrated on mitigating their carbon footprints. BP (2017) stressed that situation clearly by stating that they were partnering with several stakeholder groups, including peers, NGOs, and academic institutions, to enhance the industry's capabilities regarding detection, quantification, and reduction of GHG emissions (p. 15).

Engaging with Employees and Rewarding Them for Low Carbon Future is another relevant code worth mentioning due to its growing popularity among examined businesses. Unlike above mentioned collaboration activities, statements addressed by this code focuses on the internal stakeholders. In particular, it comprises commitments of firms to encourage their staff members to participate in climate action. To that end, businesses introduced opportunities for their employees such as carbon offsetting programs and remuneration for GHG emission reduction achievements.

Collaboration activities appeared primarily as an impression management strategy that underlined the dedication of firms to decrease their carbon footprint, rather than challenging the climate change science and rejecting the contribution of anthropogenic emissions to the crisis. The following graph (Figure 2) illustrates that emphasis on the collaboration efforts gradually increased throughout the decade as an outstanding method for the selected businesses. In this area, Shell is identified as the company with the highest coding frequency level (6,8% of words) among the studied organizations.

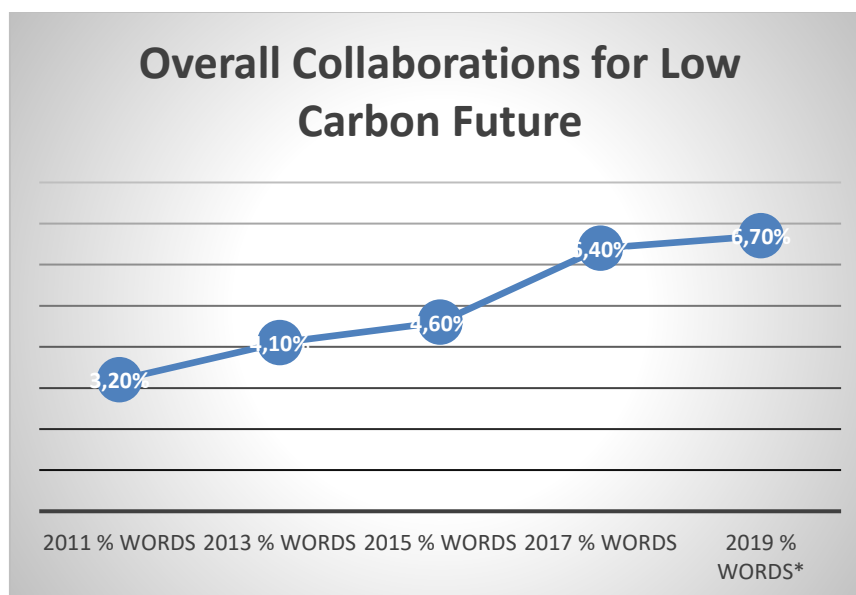


Figure 2. Year Based Analysis of the Overall Collaborations for Low Carbon Future Code

4.2 Innovations in Response to Climate Change

Innovations, advanced technologies, and research & development (R&D) activities of companies to develop low carbon energy solutions are detected as recurrent themes and disclosures on such advancements are covered by the *Overall Innovations for Low Carbon Future* code. The chart below (Figure 3) demonstrates the distribution of innovation-related sub-codes, and *Innovations in Alternative Energy and Fuel* stands out as the prevalent theme among them, which indicates developments in energy production techniques other than fossil-fuel ones. Therefore, improvements in renewables, nuclear, biofuel, and hydrogen energy technologies are all contained by this code. As a noteworthy insight, examined companies' innovations in the biofuel field were emphasized more than the combination of remaining alternative sources. Hence, a separate sub-code, *Innovations in Biofuel and Biopower Field*, is dedicated to that area. Other innovation-related statements which studied firms highlighted are coded as *Innovations in Energy Use and Efficiency*, *Innovations in Carbon Capture and Use (CCUS) Field*, and *Innovations to Reduce Operational GHG Emissions*, respectively.

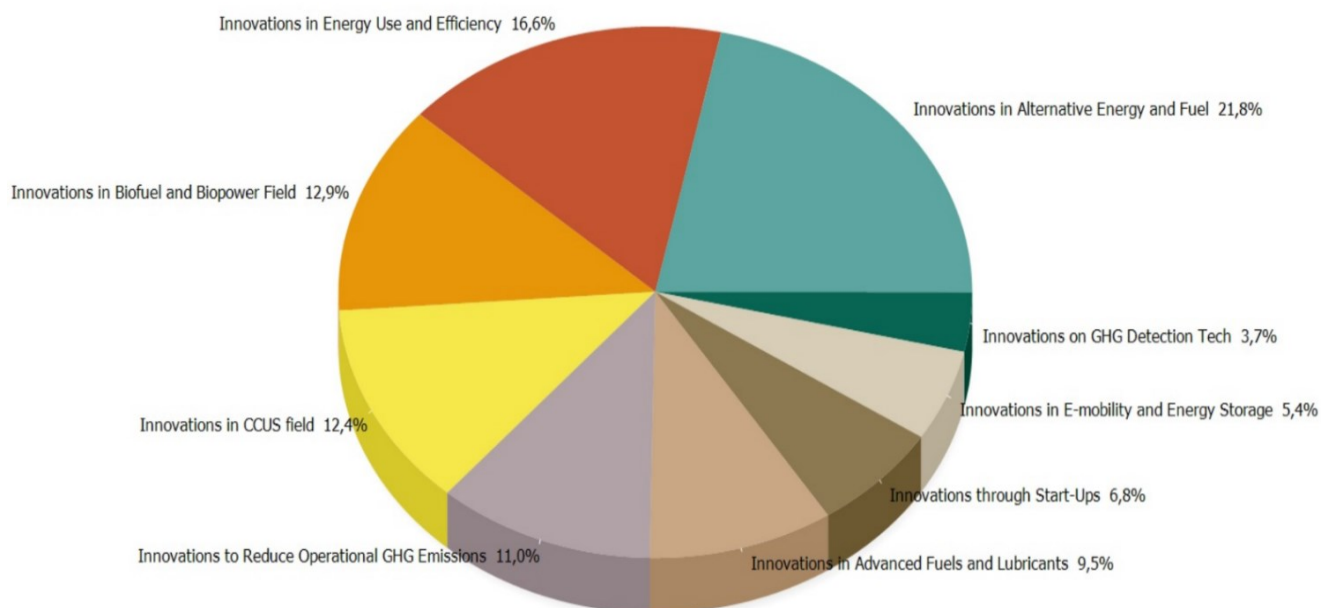


Figure 3. Distribution of Companies' Innovation Efforts

Promoting the emergent lower carbon innovations can be recognized as a form of stigma reduction strategy. However, determining the nature of organizational responses to social contestation with a theoretical approach depends on the areas that companies advocated.

It can be inferred that recent advances in renewable energy production and enhanced affordability of these technologies clearly influenced the sustainability disclosures of the oil and gas companies (Ge et al., 2019), since developments in that area stood out as the salient field among other innovation-related

statements. BP (2015) supported this situation by stating that innovation and wider deployment are expected to bring down the costs of renewable technologies. Therefore, supporting the technological improvements in the renewable energy generation area can be interpreted as a significant incentive for firms to utilize the category straddling as a transformative strategy based on claiming membership of several categories to reduce the illegitimacy of tainted core features (Alexy & George, 2013).

On the other hand, the introduction of overall innovations aimed at reducing the carbon footprint of conventional oil and gas operations such as CCUS technologies or advanced fuels and lubricants can be classified as defensive practice adoption techniques as per the earlier explained categorization of this study.

As in the case of the *Overall Collaborations for Low Carbon Future*, it was noticeable that the *Overall Innovations for Low Carbon Future* became a more pronounced theme for companies in the later years of the decade, as highlighted by the figure below (Figure 4).

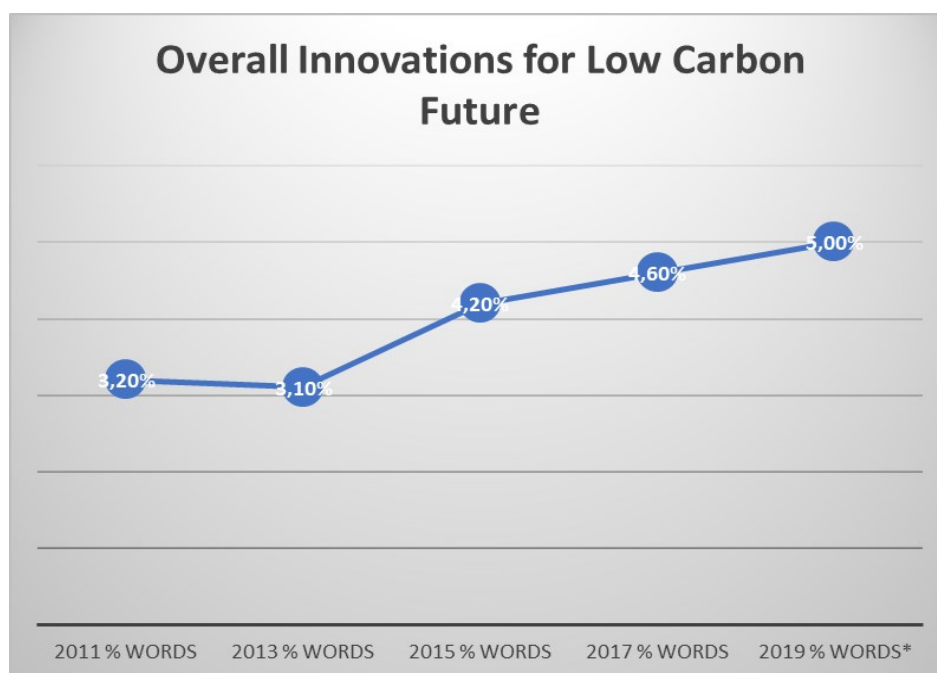


Figure 4. Year Based Analysis of the Overall Innovations for Low Carbon Future Code

Technological developments within the oil and gas field's operational boundaries may also allow companies to access more resources with higher efficiency gains. Statements of organizations that emphasize such improvements are encompassed by the *Innovations to Boost Production in Oil and Gas* code. Enhanced oil recovery techniques can be given as an example of developments in this field. Shell underlined the potential benefits of recovery practices by stating that "injecting chemicals, gases, or steam to thin the oil or coax it out of a reservoir can raise production levels by 5 to 20%" (Shell, 2011, p. 17). Companies can also prefer

to inject carbon dioxide into wells as a recovery method and permanently sequester it into the ground, consequently, reduce their carbon footprint (Hiatt et al., 2015).

Statements covered by this code include technological progress in both conventional and unconventional fossil fuel areas involving shale gas and deep-water operations. As indicated by the graph below, firms lost their interest considerably in advocating advances in these fields to legitimize their operations starting from the second half of the last decade (Figure 5).

The recent change in firms' attitude demonstrates that the utilization of symbolic impression management strategies to justify tainted features of the oil and gas industry is not deemed a prominent approach for studied organizations as it was in the earlier years of the decade.

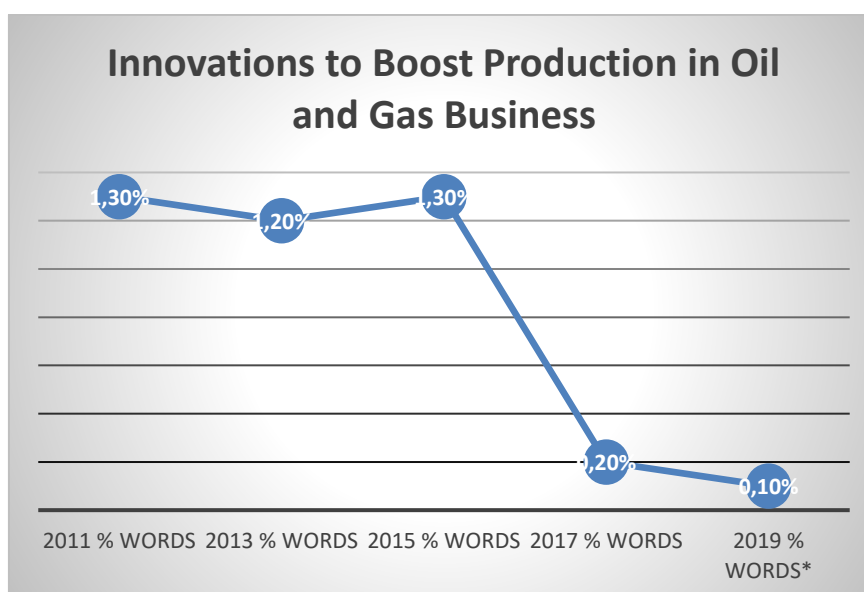


Figure 5. Year Based Analysis for the Innovations to Boost Production in Oil and Gas Business Code

4.3 Mitigating Greenhouse Gas Emissions

Companies frequently introduced various mitigation measures to reduce operational carbon footprint of their conventional operations. Disclosures of organizations on this subject are captured by the overarching code of *Mitigating Operational GHG Emissions*. The study revealed that *Reducing Flaring*, *Recovering Gas and Heat*, *Mitigating Methane Emissions*, and *Detecting Methane and Repairing Leaks* were advocated as some of the common practices to lower the GHG emissions of the oil and gas industry and each of them is addressed by their respective sub-codes. While Shell was noted as focusing more on the *Reducing Flaring*, *Recovering Gas and Heat* (2.1%) aspect, BP preferred to feature their efforts on *Mitigating Methane Emissions* (1.5%) instead.

Growing Lower Carbon Products is another relevant code that concentrates on company disclosures regarding the introduction of lower-carbon oil and gas products from advanced fuels to lubricants to petrochemicals. It is observed as a progressively more popular approach for companies throughout the study's designated time span. Shell was remarked as the business that underlined its efforts on the subject the most (2,1%) which was followed by BP (1,7%).

As emphasized earlier, the introduction of such tangible practices by oil and gas corporations within their categorical boundaries to limit their contribution to global warming is inferred as a defensive practice adoption by this study. These new measures are utilized as defensive tools against the criticism of hostile audiences who question the moral legitimacy of organizational actions (Carberry & King, 2012).

The chart below (Figure 6) indicates that the *Mitigating Operational GHG Emissions* steadily increased its recognition as a prominent code among analyzed companies between 2011 and 2019, similar to the previously revealed codes.

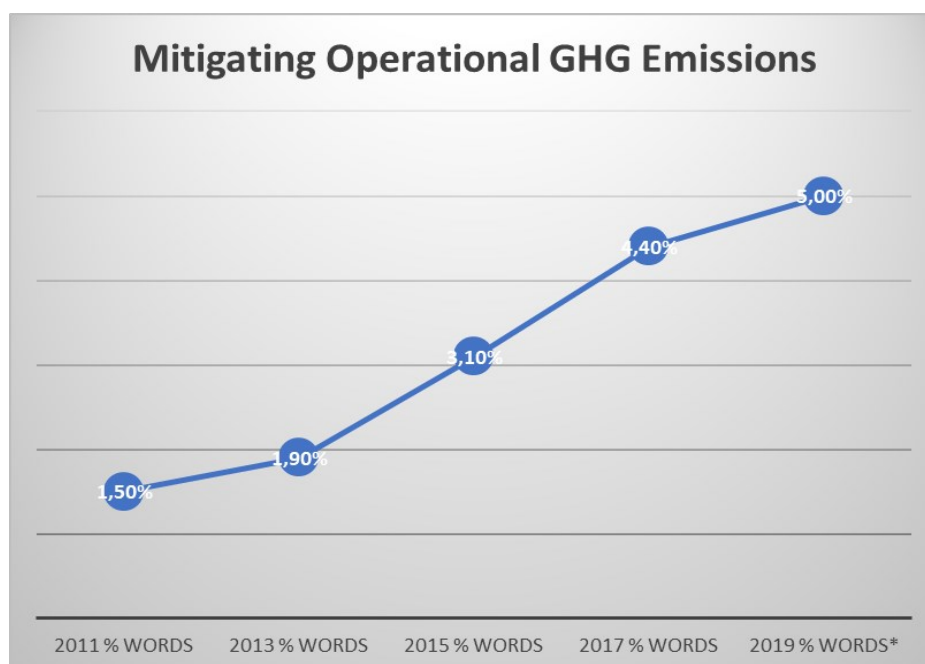


Figure 6. Year Based Analysis of the Mitigating Operational GHG Emissions Code

4.4 Monitoring and Reporting Greenhouse Gas Emissions

Recording and reporting of GHG emissions are detected as widespread activities among studied organizations. *Tracking and Reporting GHG Emissions* is the code that addresses company statements on this topic. It also contains firms' efforts to track their carbon offsets and detect fugitive emissions in their operations. It should be noted that climate change-related reporting activities that did not specifically indicate GHG emissions are addressed by a separate yet frequent code,

named *Reporting Climate Action Performance*. Statements under this code mainly emphasize disclosures of firms related to energy use, efficiency, and intensity, along with flaring and venting performances.

The analysis detects a noticeable increase for later years of the decade regarding companies' willingness to share their GHG emissions data through sustainability reporting, as demonstrated by the following chart (Figure 7). Companies' tendency to monitor and disclose their climate change performance data can be interpreted as a sign of impression management strategy that is based on enhancing the reliability of their business image.

Organizations claimed that they adopted a transparent approach for their disclosures and established an open communication culture through various partnerships. For instance, BP and Shell were stressing their dedication to improving the credibility of climate change-related reporting through collaborating with the Task Force on Climate-related Financial Disclosures (TCFD). Such statements of organizations that underline their transparency commitments are contained by the *Transparency / Open Communication for Low Carbon Future* code. As mentioned earlier, greenwashing, as a deceptive way of communication with stakeholders, is a controversial topic for the stigmatization of the conventional oil and gas industry (Cherry & Sneirson, 2012). Therefore, as can be seen from the same chart below, companies' growing interest in the reliability issues in recent years provides an important insight for this study even though a minor setback was observed in 2019. Studied firms were attempting to distance themselves from the concealment tactics throughout the decade (Hudson & Okhuysen, 2009), which can be evaluated as a substantial outcome of the intensifying stakeholder scrutiny on the oil and gas industry.

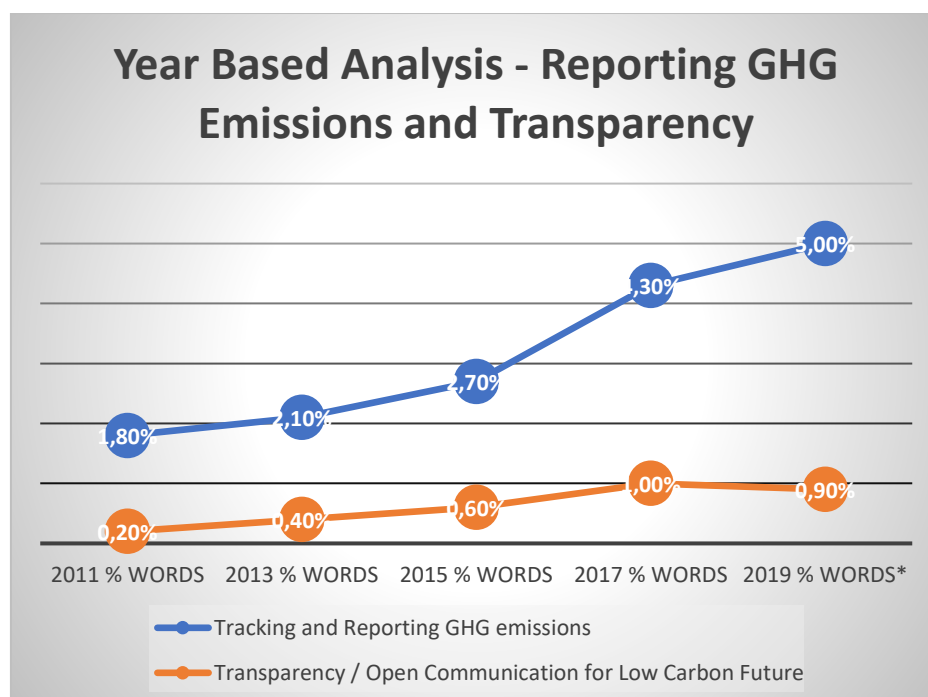


Figure 7. Year Based Analysis of Reporting GHG Emissions and Transparency Codes

Furthermore, the analysis revealed that examined companies were calculating their GHG emissions with a cradle to grave approach through the implementation of life cycle assessments (LCA). The *Life Cycle Considerations for Low Carbon Future* code covers statements of organizations regarding the introduction of LCA techniques. The code also contains carbon footprint reduction ambitions of companies targeted for customer use. For example, ExxonMobil (2013) underlined that encouraging the responsible use of their products was one of the main components of their climate change risk management strategy (p. 54). It was also noticeable that Shell (2019) addressed the full life cycle emissions of energy products they sell by disclosing their "Net Carbon Footprint" ambition (p. 40). As clearly demonstrated by the chart below, attention given to the life cycle approach increased significantly in the late 2010s (Figure 8). Companies' tendency to disclose life cycle emissions associated with their activities and products can be recognized as an effort for businesses to enhance their integrity further among stakeholder groups.

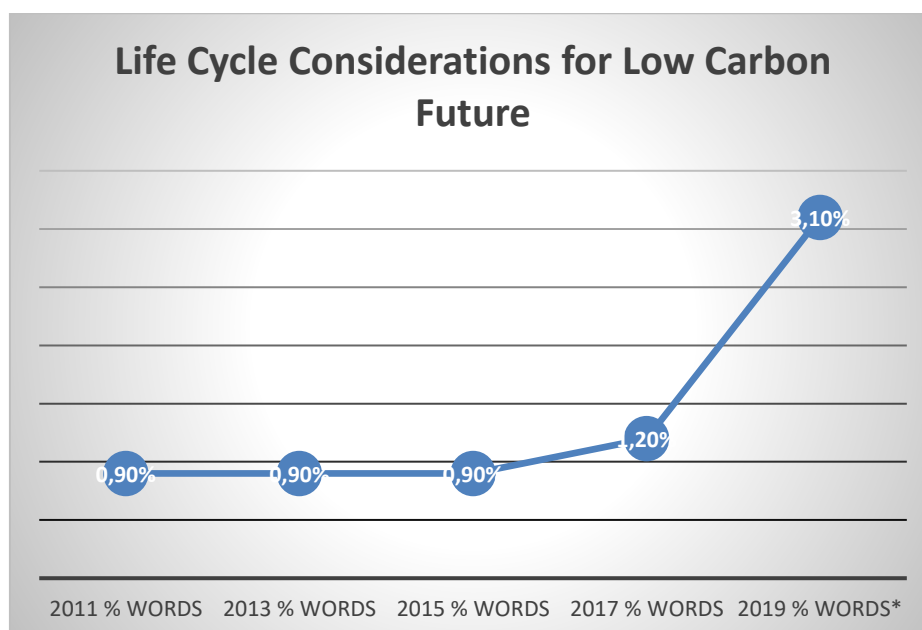


Figure 8. Year Based Analysis of Life Cycle Considerations for Low Carbon Future Code

4.5 Energy Efficiency and Fuel Economy

Advocating statements of businesses regarding their energy efficiency and fuel economy achievements is recognized as a popular approach by the study and coded as *Promoting Energy / Fuel Efficiency*. Businesses emphasized their efforts to deliver advanced products to customers and enhance conventional operations to reduce overall energy consumption. BP (2015) underlined that lower carbon intensity and energy efficiencies achieved through future innovations might lead energy use-related GHG emissions to rise at slower rates than global economic

growth (p. 12). Therefore, it would be appropriate to classify this type of organizational behavior as a defensive practice adoption since it offers new practices or enhancements to mitigate the tainted industry's carbon footprint.

There was a considerable decrease observed in the utilization of this approach during the last decade by studied companies, unlike previously mentioned codes (Figure 9). It is possible to evaluate that situation as a noteworthy sign for the shift in the organizational behavior of the global oil and gas sector in terms of climate change-related disclosures. Instead of promoting efficiency improvements of their conventional activities and products, examined companies were gravitated towards more concrete and transitional strategies to cope with the stigmatization in recent years.

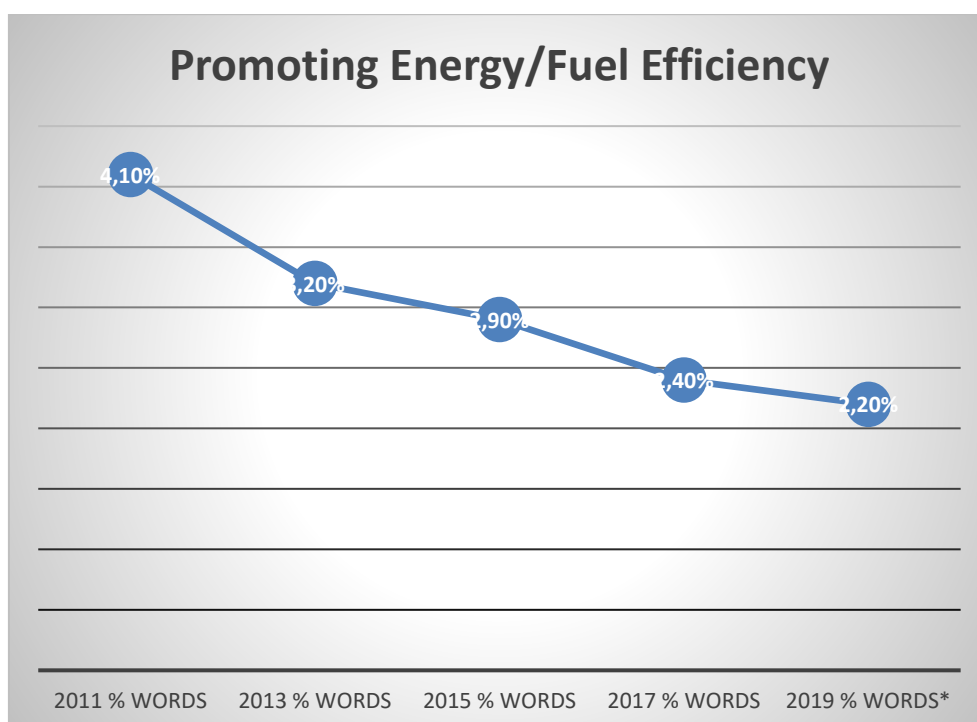


Figure 9. Year Based Analysis of the Promoting Energy/Fuel Efficiency Code

4.6 Investments in Renewable Energy

Investment activities of the selected organizations in renewable sources is regarded as a critical topic for this research and coded under the *Investments in Renewables*. The analysis illustrated that biofuels, solar, and wind power were considered central renewable energy generation fields by companies for their investment portfolios. The distribution of these sub-codes is identified as shown in the chart below (Figure 10). Accordingly, it can be asserted that biofuels were supported by businesses as the most prominent renewable energy source to invest in throughout the designated time frame. Feasibility advantages of the biofuel business were featured as a major contributor to this situation, including blending opportunities into traditional transport fuels without the need for significant

engine modifications or changes to existing fuel delivery systems. The study demonstrated that Shell and BP (both 1.6%) focused on biofuel investments in their reports considerably more than ExxonMobil (0.5%) did. Additionally, Shell is recognized as the firm with the highest interest in solar (1,1%) and wind (0,6) energy investments for the duration of the studied period.

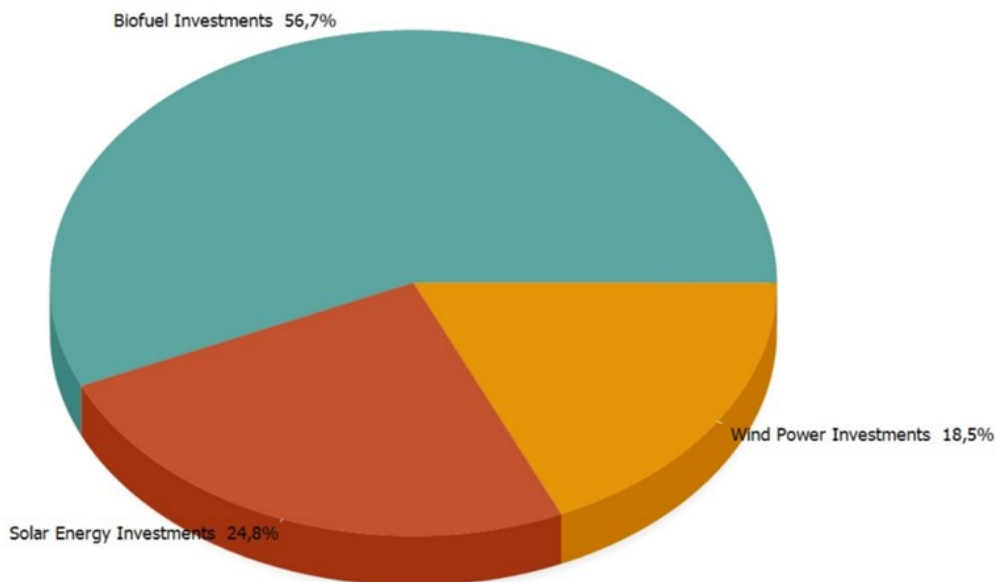


Figure 10. Distribution of the Renewable Energy Investments in Biofuel, Solar Energy, and Wind Power Fields

Investments in renewables is identified as an increasingly attractive approach for companies, as highlighted by the figure below (Figure 11). That trend was mainly driven by the rising attention given to solar and wind power in later years of the decade. As emphasized previously, the growing interest of the oil and gas firms towards renewable energy modes is a crucial indicator for adopting the category straddling strategy. It can be inferred that supermajor businesses recognized the renewable energy industry as a morally approved field and by claiming their membership in that nascent category, they attempted to enhance their legitimacy status (Alexy & George, 2013). Furthermore, the significant advancements detected in that area can be interpreted as a clear sign for the sector's energy transition commitment towards the lower-carbon energy alternatives.

Examined firms underscored the growth potential of renewable energy sources in the light of ongoing technological improvements. Statements that support this situation are assigned to the *Renewables - Emerging Field* code. It is noteworthy that BP's statements in this area were observed as substantially higher than the remaining companies (BP 1.1%, Shell 0,7%, ExxonMobil 0,4%). The biofuel and bioenergy field was promoted as the most emergent field by businesses among all renewable sources. It is noted that the distribution of codes in this area is consistent with the investment-related codes. Thus, it can be inferred that recent developments made renewables more viable alternatives for investments of analyzed firms.

Furthermore, disclosures regarding the feasibility challenges and opportunities inherent in renewable energy production involving intermittency problems of solar and wind power generation or absence of large-scale energy storage possibilities are coded as the *Feasibility of Renewables*. As can be seen from the graph below, both *Renewables – Emerging Field* and *Feasibility of Renewables* codes have demonstrated a visible rise during the last decade (Figure 12).

The trends mentioned above in the renewable energy production field indicate that the conventional oil and gas industry did not just embrace purely cosmetic impression management tactics but also utilized substantial stigma reduction strategies through their renewable energy investments to cope with the field's contestation.

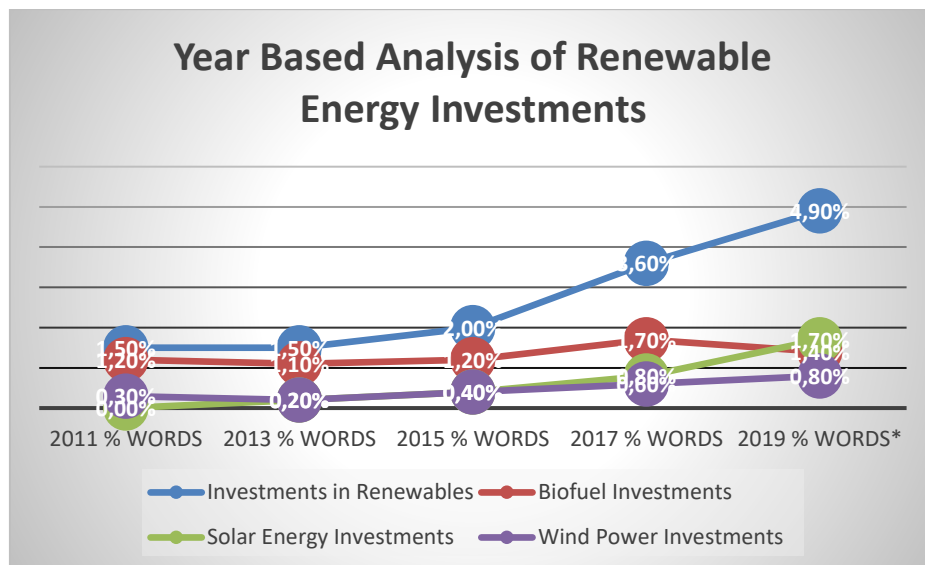


Figure 11. Year Based Analysis of Renewable Energy Investments in Biofuel, Solar Energy and Wind Power Fields

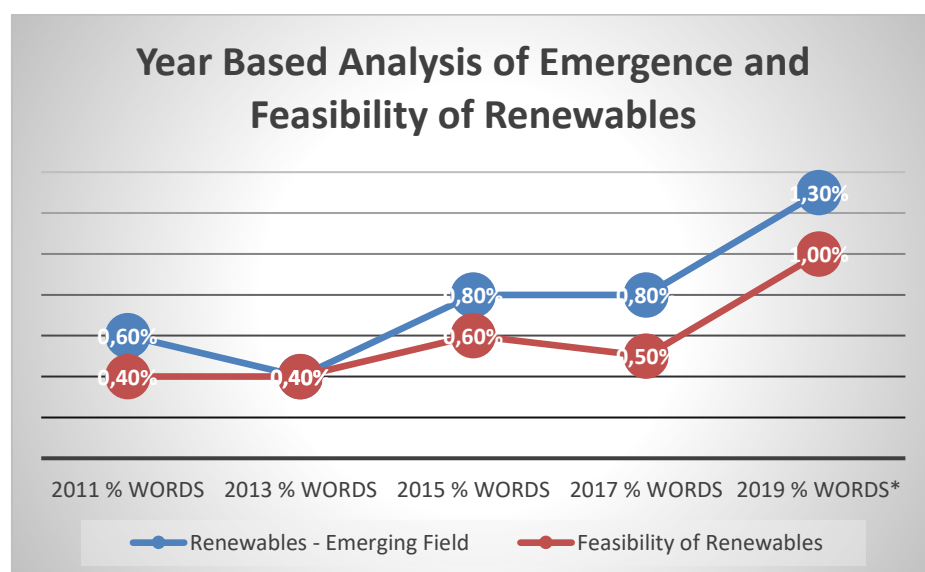


Figure 12. Year Based Analysis of Emergence and Feasibility of Renewables Codes

The companies also stressed their investments in the natural gas field in a recurring manner. *Natural Gas Investments* code covered statements of firms on this subject. It is observed that Shell emphasized their investments in that area quite often (4,5%), including liquid natural gas (1,9%) and gas-to-liquid (0,7%) operations. This study addresses companies' strategies in the natural gas field since it was asserted as a lower carbon energy source, especially when replaced with coal for power generation purposes. Supportive arguments of this situation within the analyzed content are captured by a separate code called *Natural Gas Climate Achievements*.

Although *Natural Gas Investments* is a renowned code, *Renewable Energy Investments* became an even more popular approach among studied enterprises in recent years, as highlighted by the chart below (Figure 13). This situation is considered as a meaningful inference regarding the research question of this study since it represents the shift away from symbolic impression management tactics based on justification of conventional fossil fuel operations to the transformative strategy of category straddling.

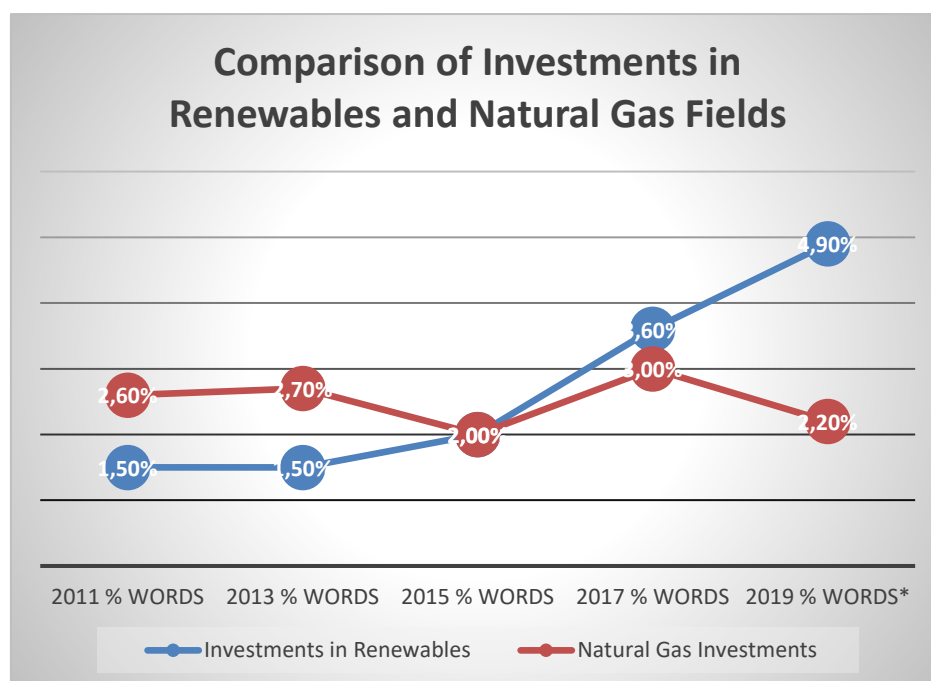


Figure 13. Comparison of Investments in Renewables and Natural Gas Fields throughout the Decade

In addition, it is observed that studied companies promoted their investments in low-carbon ventures and start-up businesses, including acquisitions. *Supporting low-carbon businesses* code includes the statements of the companies on this subject. Funded firms may provide services and products in various fields such as renewable power, advanced mobility, bio and low carbon goods, carbon management, digital transformation, and energy storage. It was noticeable that ExxonMobil did not refer to any of their low carbon venturing activities in their studied reports, while Shell was observed as the company with the highest level of

interest in the subject (1,2%). As it is evident from the chart below, the involvement of both Shell and BP in such activities raised substantially, especially during the second half of the last decade, which can be considered as another important sign regarding the adoption of category straddling tactics (Figure 14).

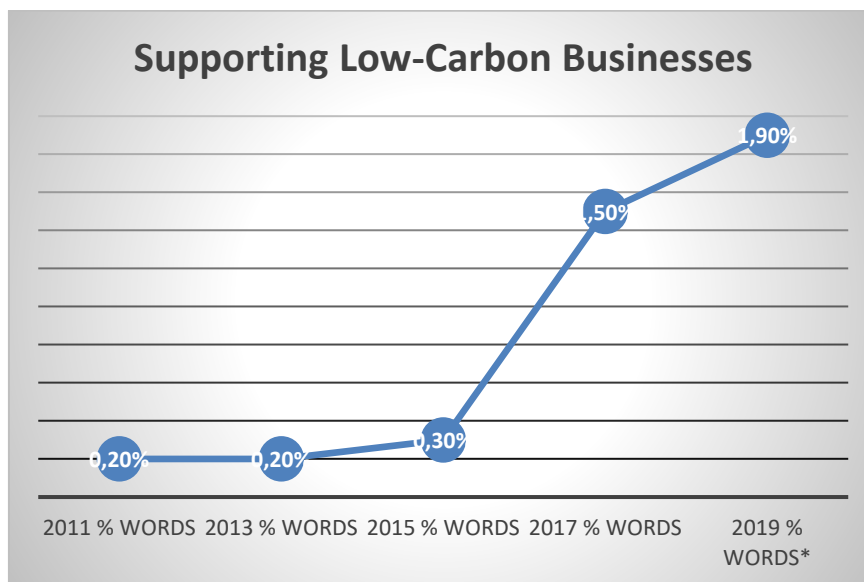


Figure 14. Year based analysis of Supporting Low-Carbon Businesses Code

4.7 GHG Reduction Targets and Achievements

Promotion of accomplishments related to climate change performance targets is stood as a significant topic among the studied firms and such disclosures of organizations coded under the *Achievements for the Low Carbon Future*. These achievements may include but are not limited to GHG emission reductions, lowered flaring operations, or enhanced energy efficiency of products and activities. There was an apparent growth during the past few years concerning this code's frequency, as indicated by the graph below (Figure 12). Hence, companies were more willing to share their carbon footprint improvements in detail through sustainability reporting than before.

At this point, *Low Carbon Ambitions and Targets* can be recognized as a supportive code to attain a comprehensive approach. It simply comprises all the statements regarding goals, ambitions, and targets set by firms to achieve a lower-carbon economy. As demonstrated by the same chart (Figure 15), organizations tend to disclose their low carbon targets significantly more in later years of the decade. Therefore, it can be construed that intensified stakeholder demands and stigmatization aiming the industry might lead companies to set concrete low carbon targets and stress their achievements accordingly. This type of organizational behavior can be classified as an impression management strategy based on the justification of conventional business activities (Suchman, 1995).

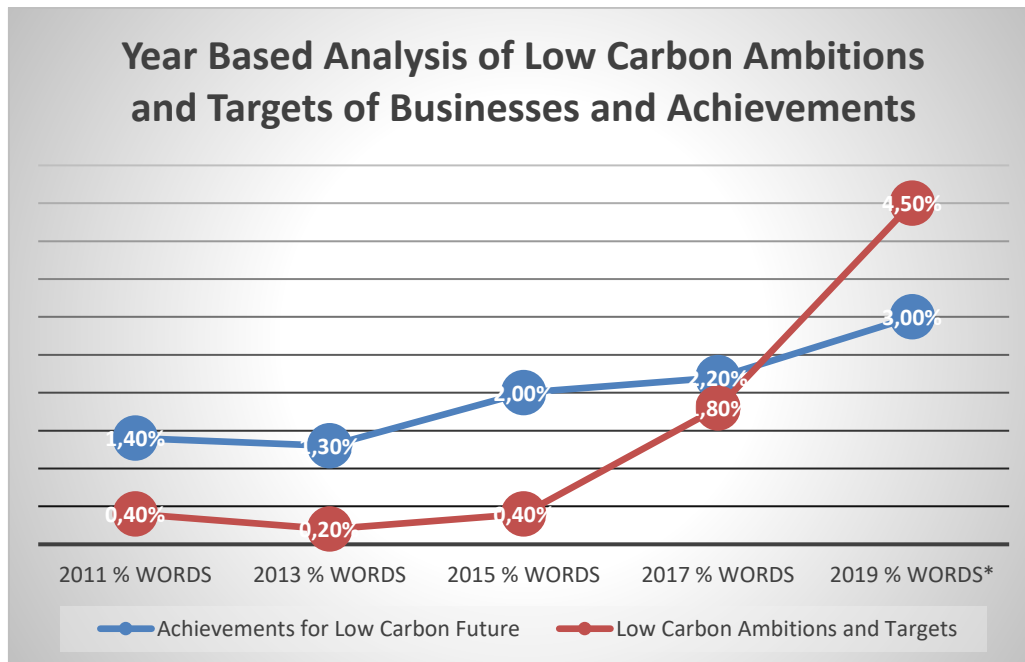


Figure 15. Year Based Analysis of Low Carbon Ambitions and Targets of Businesses and Achievements Codes

Furthermore, company declarations that demonstrate the recognition of the industry's contribution to climate change are captured by the recurrent code of the *Contribution to Climate Change and Increased GHG Emissions*. It covers the information shared by firms that demonstrate the rise of their operational GHG emissions, flaring activities, energy intensity, and other climate change impacts. For instance, Shell's statements regarding not having any immediate plans in place to move a net-zero emission portfolio are also included in this category (Shell, 2017, p. 2). This code also addresses disclosures of firms concerning their emissions that stayed at the same level throughout the years since they indicate that companies failed at lowering their carbon footprints. Even though there was a minor setback observed in recent years regarding the utilization of this code (Figure 16), it is still considered one of the key arguments used by organizations during the last decade. Statements contained by this code support the previously mentioned trend of moving away from concealment strategies (Hudson & Okhuysen, 2009). Corporations preferred to reveal their carbon footprints instead to enhance their transparency and credibility among their stakeholders.

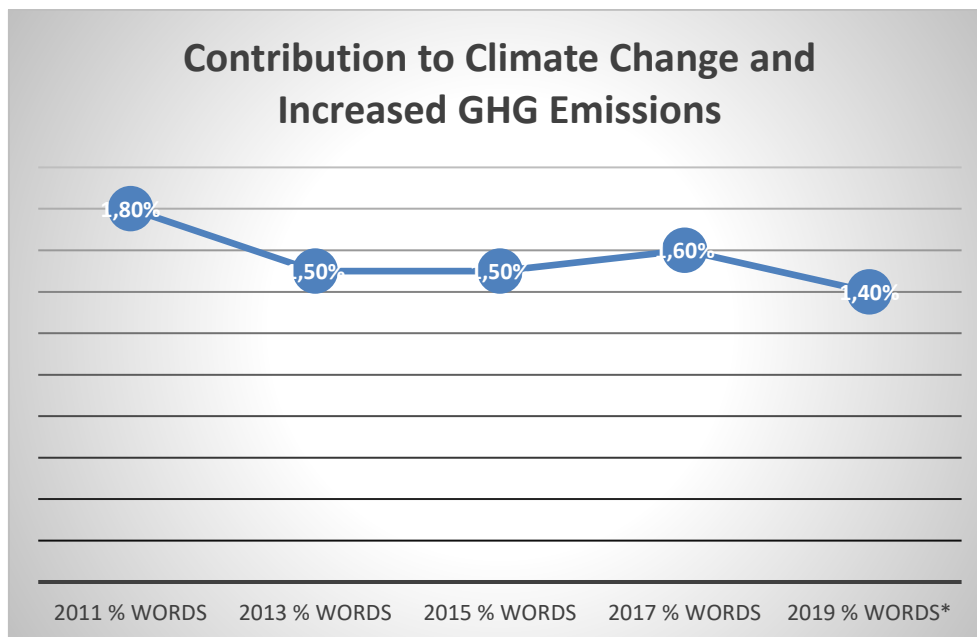


Figure 16. Year Based Analysis of Contribution to Climate Change and Increased GHG Emissions Code

4.8 Need for the Oil and Gas Industry

Companies' disclosures regarding their future energy scenarios are contained by the popular code of *Company Energy Outlook Report*. It is detected that most of the predictions of studied organizations were stressing the increasing global energy demand for the future, which was exploited as an argument to legitimize conventional operations. Therefore, the *Challenge of Growing Energy Demand for Low Carbon Future* is addressed as a separate code to highlight this specific argument. *Need for The Oil and Gas Sources* is considered another code that can complement this condition, which simply covers firms' statements aiming to underline the central role of the oil and gas industry for the energy mix. As mentioned earlier, natural gas was advocated particularly by organizations as a significant fossil fuel source to achieve the energy transition towards a lower-carbon economy. These codes can be categorized as popular impression management tactics to excuse the sector's contribution to the climate change crisis (Suchman, 1995).

Nevertheless, as can be seen clearly from the graph below (Figure 17), the magnitude of such disclosures reduced considerably, especially during the second half of the decade. This situation can be recognized as an apparent indication for oil and gas companies being not as tempted anymore to utilize excusing arguments to rationalize their carbon footprint.

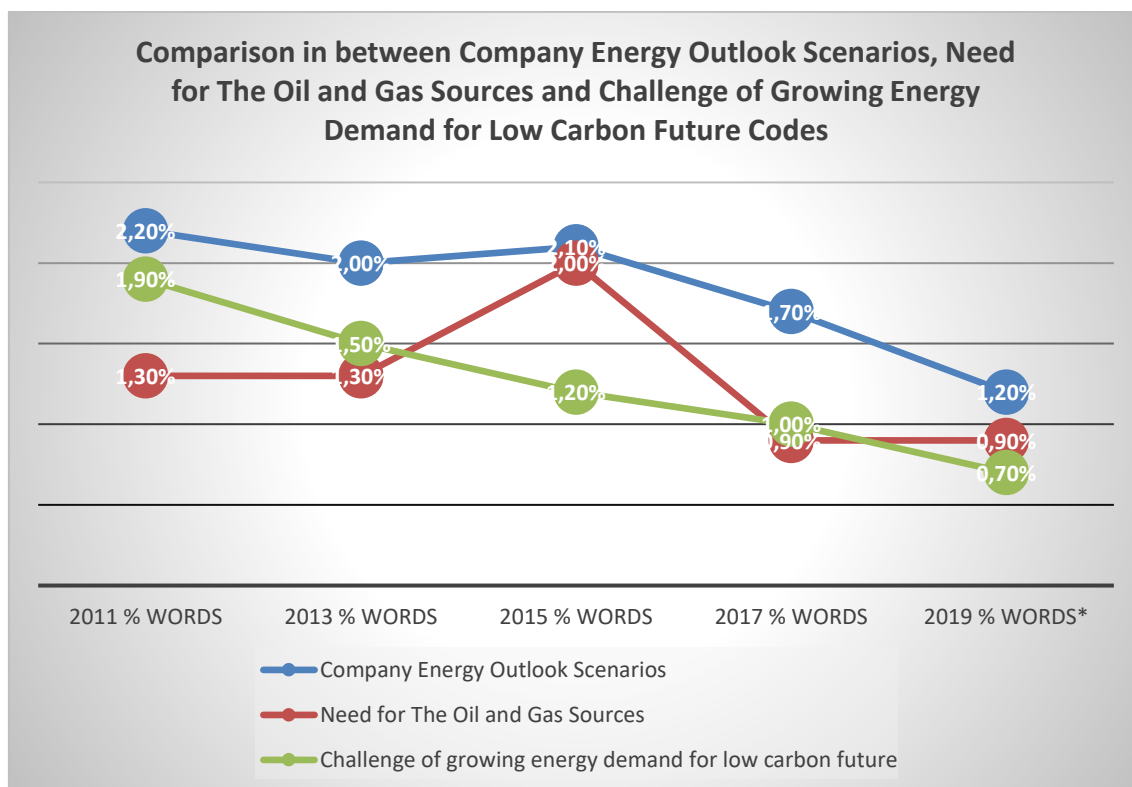


Figure 17. Comparison of Company Energy Outlook Scenarios, Need for The Oil and Gas Sources and Challenge of Growing Energy Demand for Low Carbon Future Codes

4.9 Climate Change Policies and International Agreements

As a prevalent approach, selected companies advocated legislations that aim to regulate GHG emissions or encourage the development of low carbon energy solutions. Such statements of firms are coded as *Supporting Low Carbon Public Policies*. The content analysis indicated that carbon pricing policies, including carbon tax and cap-and-trade, were frequently promoted in examined sustainability reports. Consequently, a sub-code, *Supporting Carbon Pricing Policies*, is formed to address such efforts. BP stood out as the firm that predominantly emphasized its endorsement for carbon pricing policies (1,4%). Moreover, supportive disclosures of businesses regarding the regulations and subsidies that incentivize the advancement of low carbon technologies are contained by the sub-code of *Incentives through Low Carbon Policies* accordingly. As emphasized by BP (2011), supporting the advancement of renewable energy generation through a production tax credit in the US can be an evident example of that approach (p. 19).

Highlighting the lack of effective legislative structures can also be identified as an impression management strategy based on excusing GHG emissions associated with the tainted industry. Accusing external elements to rationalize contested activities is recognized as a typical organizational behavior to cope with stigma (Suchman, 1995). For instance, BP (2011) stressed that climate change

problems could only be tackled through governments offering a coherent and stable policy framework for the private sector to invest in low carbon technologies (p. 16). ExxonMobil (2017) supported that argument by stating that the achievement of such technologies' utilization would be dependent on policymakers creating an adequate legislative structure that facilitates innovation and competition (p. 19). Thus, firms can simply aim to underline other actors' responsibilities on the climate change subject through such arguments as an attempt to reason their controversial features.

The assessment showed that companies' disclosures supporting climate-related public policies declined substantially in the second half of the decade, as demonstrated by the following figure (Figure 18). Hence, it is reasonable to claim that, even though companies still advocate for low carbon regulations and engage with governments through lobbying activities, this topic is no longer considered a prominent impression management approach for their sustainability reporting as it was in 2015. This significant downward trend can be evaluated as an outcome of the expectations set by the Paris Agreement.

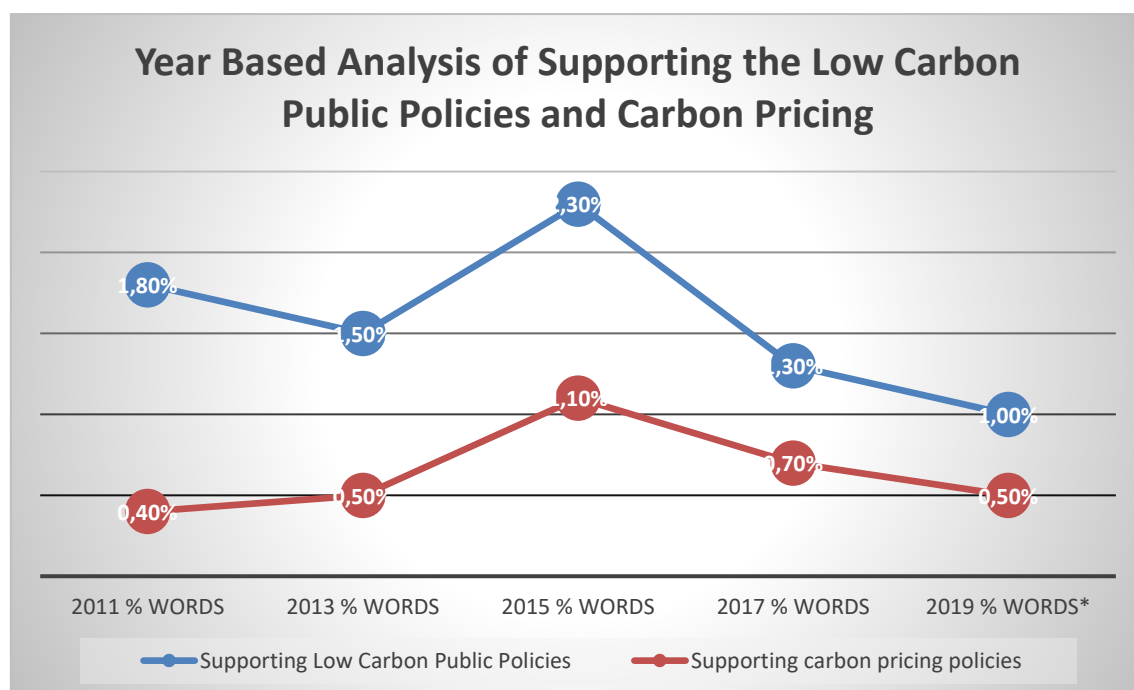


Figure 18. Year Based Analysis of Supporting the Low Carbon Public Policies and Carbon Pricing Codes

The content analysis revealed that companies frequently referred to international agreements on climate change issues in their sustainability disclosures. Notably, the support given by examined businesses to international treaties grew significantly, starting from 2015, which also demonstrated the Paris Agreement's influence over oil and gas firms. The year-based analysis chart of the *Supporting International Agreements on Climate Change* code below illustrates this situation clearly (Figure 19). Additionally, organizations introduced IPCC and IEA predictions to underscore worldwide climate change-related trends and occasionally compared

their energy outlook scenarios with them. The research captured arguments of companies in this area by the *Referring to IPCC and IEA Predictions* code. Such declarations of firms can be inferred as impression management efforts to enhance their public image by highlighting their climate action commitment.

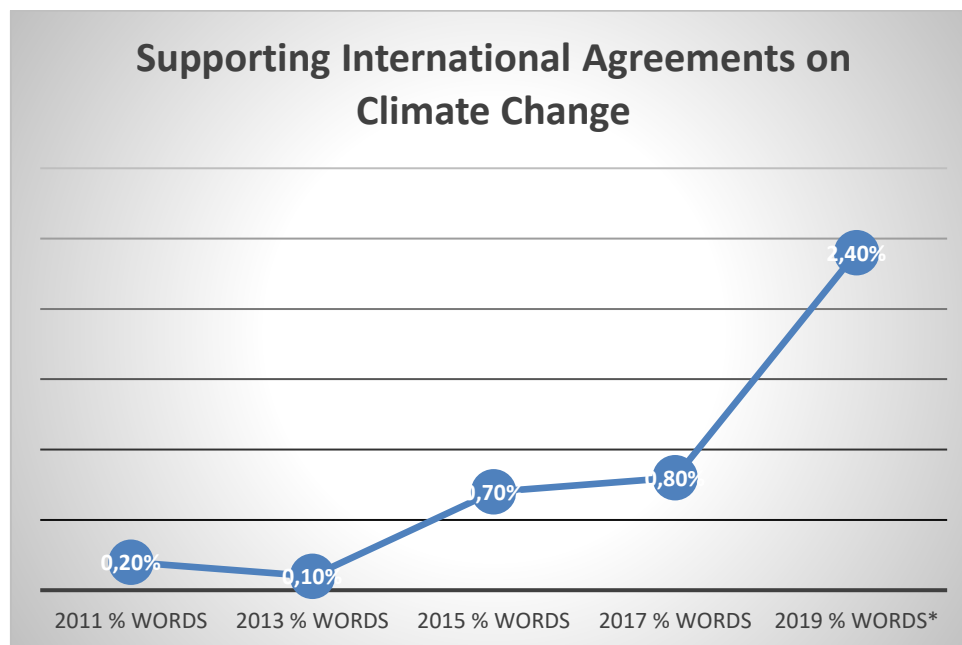


Figure 19. Year Based Analysis for the Supporting International Agreements on Climate Change Code

4.10 Commitment for the Energy Transition

Supermajor companies also underlined their dedication to the energy industry's shift towards a lower-carbon economy as a noteworthy approach. *Commitment to Energy Transition towards Low Carbon Economy* code contains such disclosures of firms. A similar code, *Commitment for the Climate Action*, comprises statements of organizations that indicate their devotion to the global efforts to tackle the climate crisis. The chart below clearly illustrates that both types of statements were utilized by companies considerably more in their recent sustainability reports (Figure 20).

This condition is considered a meaningful insight for the study. It shows that the shift towards alternative and low-carbon energy sources to cope with the global warming problem is acknowledged by the conventional oil and gas industry. Consequently, it would be convenient to interpret such disclosures as supporting findings for the adoption of earlier mentioned category straddling strategies.

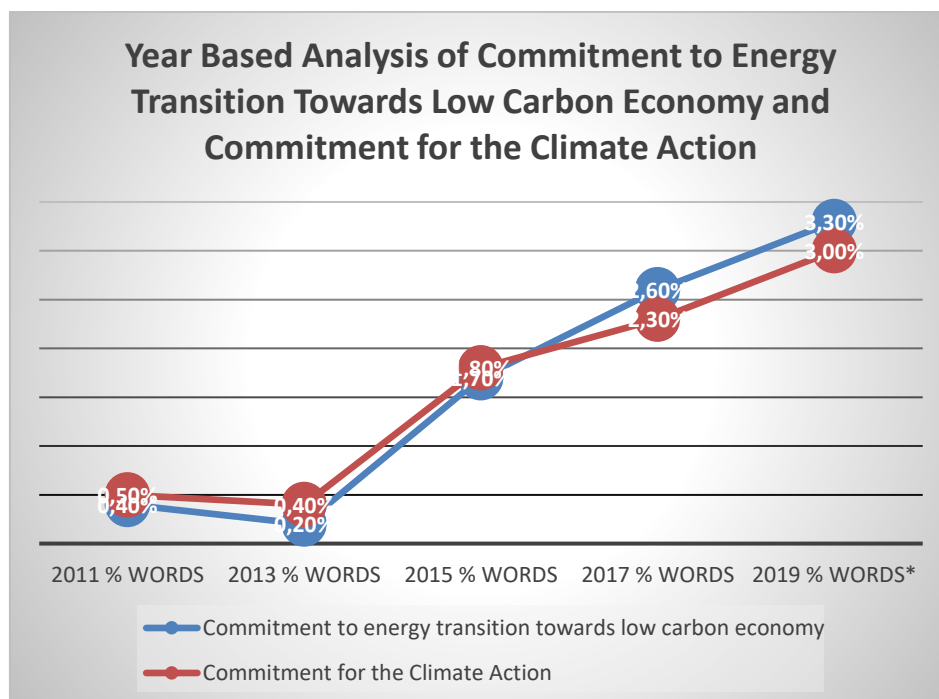


Figure 20. Year Based Analysis of Commitment to Energy Transition Towards Low Carbon Economy and Commitment for the Climate Action Codes

4.11 Divestment from the Unconventional Oil and Gas Business

Examined firms highlighted the technological advancements and opportunities in alternative oil and gas fields, including coalbed methane, shale, and tight oil & gas. *Unconventional Oil and Gas Development* code involves such disclosures of companies. It should be noted that oil sands operations of firms are covered by separate categories, including *Oil Sands Investments* and *Oil Sands Climate Impacts and Mitigations*. The chart below reveals that the frequency level of codes related to unconventional oil and gas development along with oil sands activities dropped considerably throughout the last decade (Figure 21).

BP (2013) emphasized GHG reduction achievements linked to shale gas development in the US (p. 2). Nevertheless, advancements in this field were largely related to replacing coal in power production, a fossil fuel with a greater carbon footprint.

Some of the unconventional sources are known for their high level of GHG intensity. For instance, Shell (2011) admitted that total carbon dioxide emissions generated by oil sands operations are detected as approximately 5 to 15% more than conventional crude oil activities as per Cambridge Energy Research Associates (p. 23). Hence, the shift of the analyzed organizations' behavior in that area can be considered a meaningful finding for this study regarding the industry's contribution to climate change.

In addition, the noticeable growth for the frequency of *Asset Divestments Strategy* code is backing up that trend since studied firms underscored that they were disengaging from some of the controversial activities. For example, Shell declared that they stopped their offshore operations in Alaska and oil sands activities in Canada in early 2016 (Shell, 2015, p. 48). Accordingly, it can be inferred that companies introduced asset divestment as a viable and concrete stigma reduction tactic (Durand & Vergne, 2012), in particular for their unconventional activities with undesirable attributes, including the high level of GHG emissions.

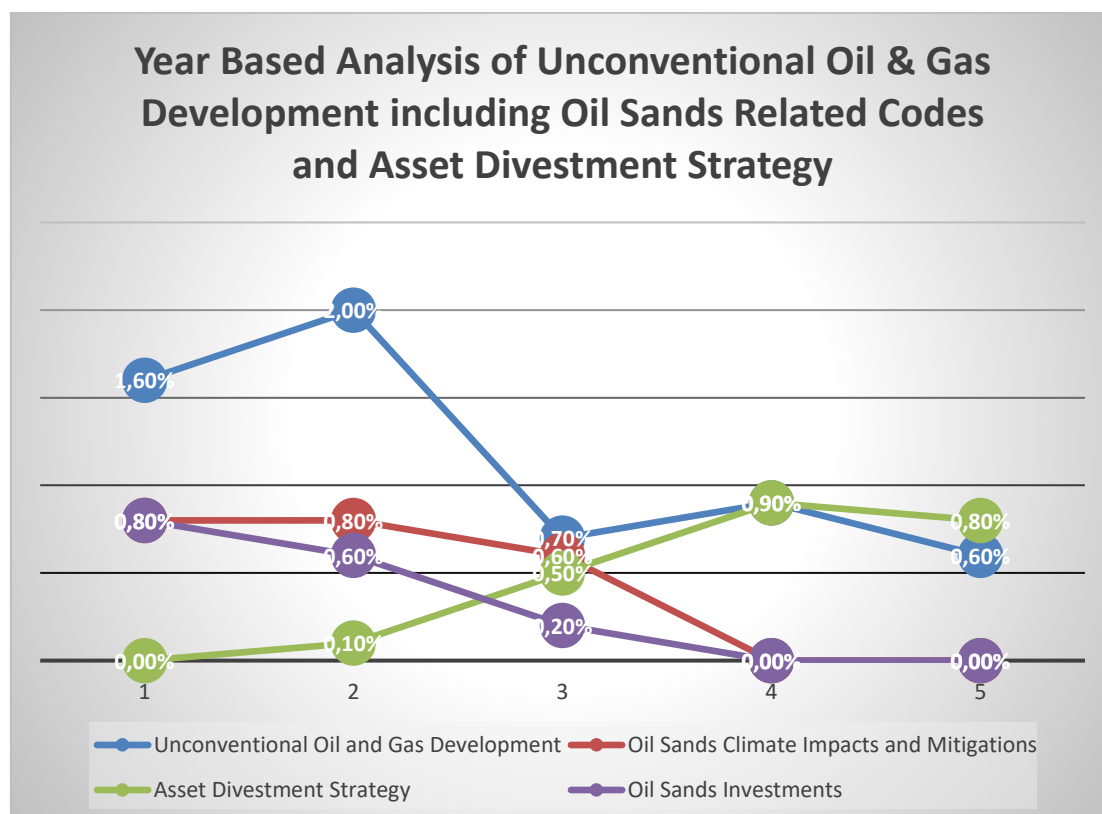


Figure 21. Year Based Analysis of Unconventional Oil and Gas Development including Oil Sands Related Codes and Asset Divestment Strategy

4.12 Carbon Capture Use and Storage Technologies

The studied companies endorsed Carbon Capture Use and Storage (CCUS) technologies as a valuable tool to lower the climate change impacts of conventional oil and gas operations. Therefore, organizations highlighted their investments and collaboration efforts in this emerging field throughout the decade by adopting a defensive practice adoption method. Climate achievements of the CCUS deployment and future potentials are stressed frequently, along with feasibility challenges and opportunities for the development of this technology. As a significant insight, BP mentioned that they were scaling back activities due to uncertainty around the policy framework and funding models for CCUS advancement

in 2013 (BP, 2013, p. 14). It is observed that all the examined companies underlined the importance of public policies to incentivize technology expansion. Moreover, infrastructural, logistical, technical, and cost-related challenges are stressed by organizations in their disclosures.

The content analysis captured such arguments through respective codes, including *CCUS Investments*, *CCUS Achievements*, and *Potential and Feasibility of CCUS*. In compliance with the chart given below, utilization of all the CCUS related codes, particularly CCUS Investments, increased noticeably during the last decade (Figure 22). Thus, it can be affirmed that CCUS became a more relevant technology for the oil and gas industry to lower their GHG emissions and justify their contested activities.

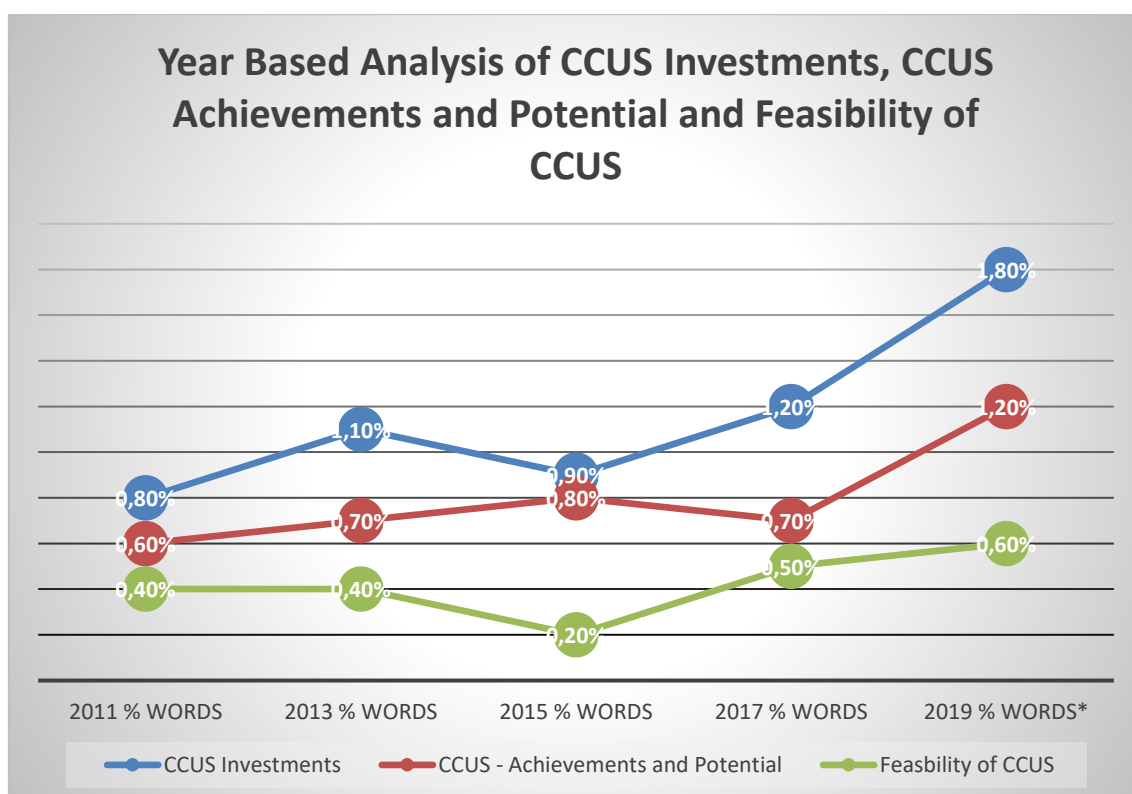


Figure 22. Year Based Analysis of CCUS Investments, CCUS Achievements and Potential and Feasibility of CCUS Codes

4.13 Electrification as Climate Action

The research revealed that companies supported the electrification trend to achieve decarbonization of the global energy system. In this context, electrification is simply defined as the shift towards the production and distribution of electricity to meet with the global energy demand rather than conventional fossil fuel-based supplies with higher carbon footprints such as coal, oil, and gas.

Electrifying the energy system is considered a critical factor in tackling the climate change issue. Electricity can be generated through low carbon or even carbon-free sources, including renewables, nuclear, and fossil fuel power plants equipped with previously mentioned CCUS technologies (Sugiyama, 2012). The *Supporting Electrification for Low Carbon Future* code addresses organizations' disclosures that highlight the carbon footprint benefits of electricity generation through low carbon activities. E-Mobility arguments are contained by a separate code, *Supporting E-Mobility*. It includes statements that encourage overall e-mobility advancements comprising the development of electric vehicles (EVs), hybrid cars, and hydrogen fuel cell technologies. It also covers investments in batteries, EV charging, and hydrogen refuelling technologies. Since firms occasionally emphasized their efforts to deploy charging stations, such activities are assigned to the *Offering EV Charging and Hydrogen Stations* code. The study indicated that Shell stood out as the company that emphasized its support the most for electrification and e-mobility trends.

The following chart implies that examined oil and gas organizations were getting increasingly supportive of these transitional movements in recent years (Figure 23). Efforts in that field can be interpreted as a sign for the category straddling strategy since organizations attempt to distance themselves from the tainted features of the traditional fossil fuel-based operations and dilute the stigma by addressing their commitments towards the electrification trend (Vergne, 2012).

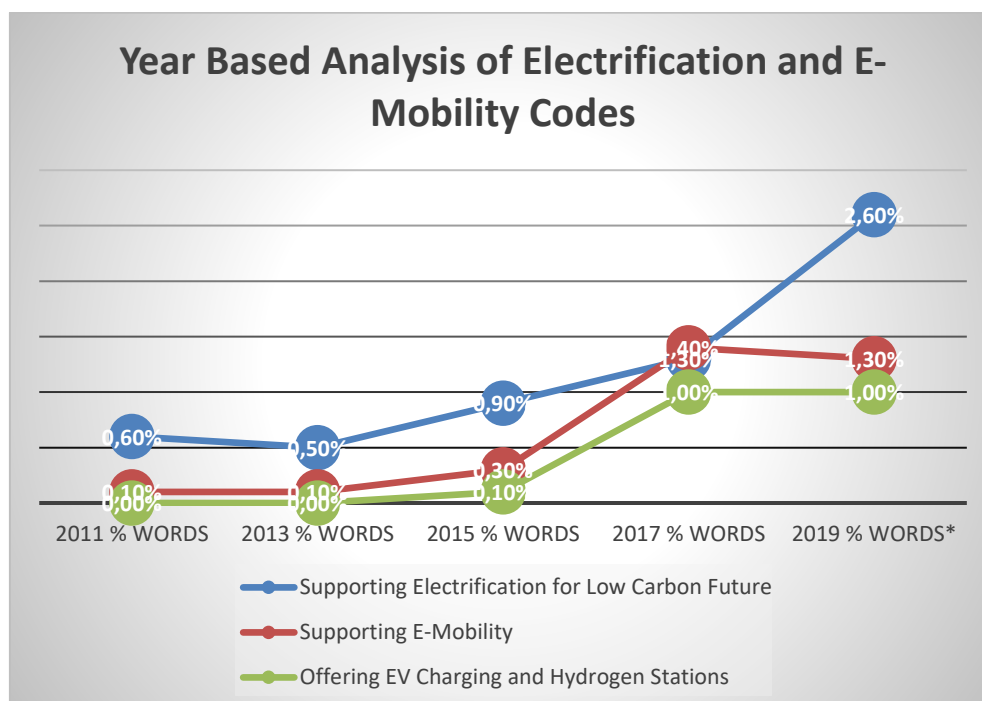


Figure 23. Year Based Analysis of Electrification and E-Mobility Codes

4.14 Carbon Offsetting and Natural Climate Solutions

Analyzed companies advocated carbon offsetting as a viable tool that is simply based on achieving GHG reductions in one place to compensate for emissions generated elsewhere (Liu et al., 2015). Statements of organizations that point out this approach are captured by the *Promoting Carbon Offsetting* code. Carbon-neutral offerings and carbon credits introduced by businesses are included in this code accordingly. It was noted that organizations supported the deployment of natural carbon sinks and green infrastructures to create such carbon credits. They underlined the significant role of the advancements in this area to cope with the climate change issue. Disclosures of firms that promote such developments are addressed by the respective code of *Promoting Natural Climate Solutions (NCS)*. It is a field that ExxonMobil ignored in their sustainability reports for the designated time frame of the research while Shell displayed their support the most among the examined firms (Shell 0,9%, BP 0,3%, ExxonMobil 0%). The study revealed that ExxonMobil did not mention any carbon offsetting programs in their analyzed disclosures as well. BP stood out as the firm with the greatest commitment towards the offerings in this area (1,2%).

The following graph demonstrates companies' increasing attention on both carbon offsetting and natural climate solutions during the second half of the decade, which peaked in 2019 (Figure 24). Such offerings of oil and gas organizations can be inferred as a defensive practice adoption that implies attempting to excuse the contested features of the conventional operations by participating in morally approved activities.

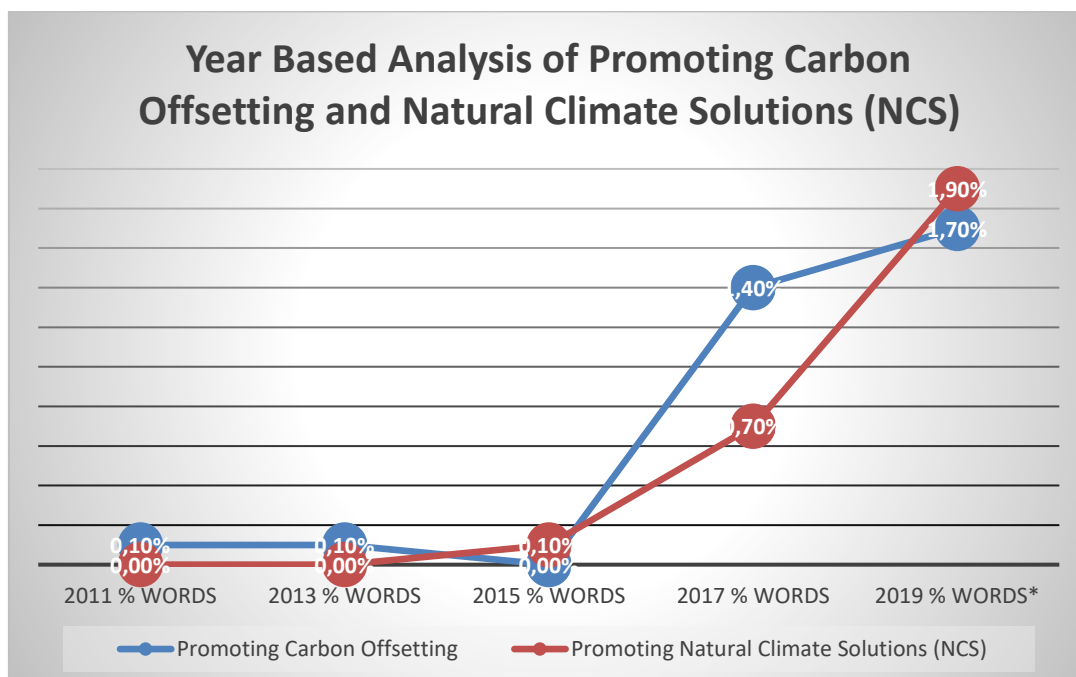


Figure 24. Year Based Analysis of Promoting Carbon Offsetting and Natural Climate Solutions (NCS) Codes

4.15 Internal and External Assurance for the Climate Performance

The analysis demonstrated that examined sustainability reports disclosed evaluations of external assurance providers regarding companies' climate change performances. In line with the earlier findings, organizations emphasized their commitments towards transparency by including inferences of independent assessments in their annual reports. Firms may seek such "monitors" to improve the credibility of their climate change-related activities (Suchman, 1995). However, as can be observed from the chart below, companies' supportive statements on this topic that are coded as *the External Assurance for Climate Performance* code have reduced throughout the years (Figure 25).

Organizations' statements concerning their internal audits, reviewing, and monitoring activities to assure climate action performances are assigned to a separate code of *Internal Assurance for Climate Performance*. Arguments regarding the governance structures and oversight of top managements to achieve low carbon ambitions are covered by this code as well. The same graph illustrates that efforts of businesses for internal assurance activities have exponentially increased during the last decade.

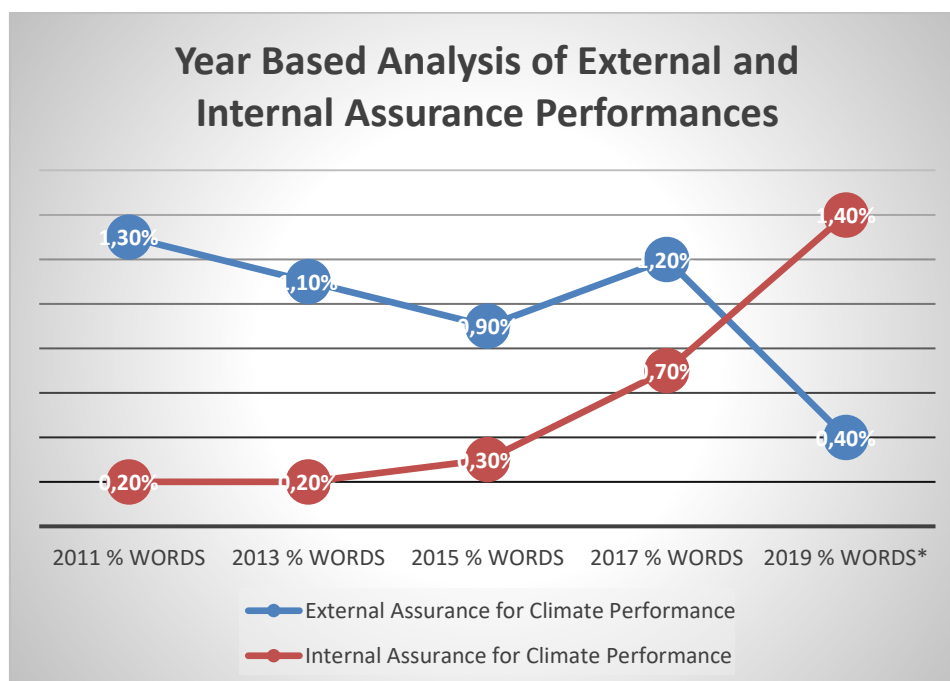


Figure 25. Year Based Analysis of External and Internal Assurance Performances Codes

4.16 Household Energy Solutions

The analysis indicated that businesses supported energy solutions for consumers to generate, store, control, and redistribute their individual power, which may also feature off-grid solar systems. Supportive arguments of companies related to such activities are addressed by the *Household Energy Solutions for Low Carbon Future* code. Additionally, the code includes the promotion of practices that can enhance households' overall efficiency, such as high-performance insulations that can lower the heating requirements. This category also addresses Shell's efforts regarding the development of clean cookstove solutions for families in underdeveloped countries since advancements in that field can lead to significant GHG emission reductions by replacing solid fuel types like wood and charcoal with cleaner alternatives. Internal efforts of studied organizations to improve their own office buildings' energy efficiency are contained by this category as well. The graph below shows a noticeable growth regarding the frequency level of this defensive practice adoption method during the second half of the decade (Figure 26).

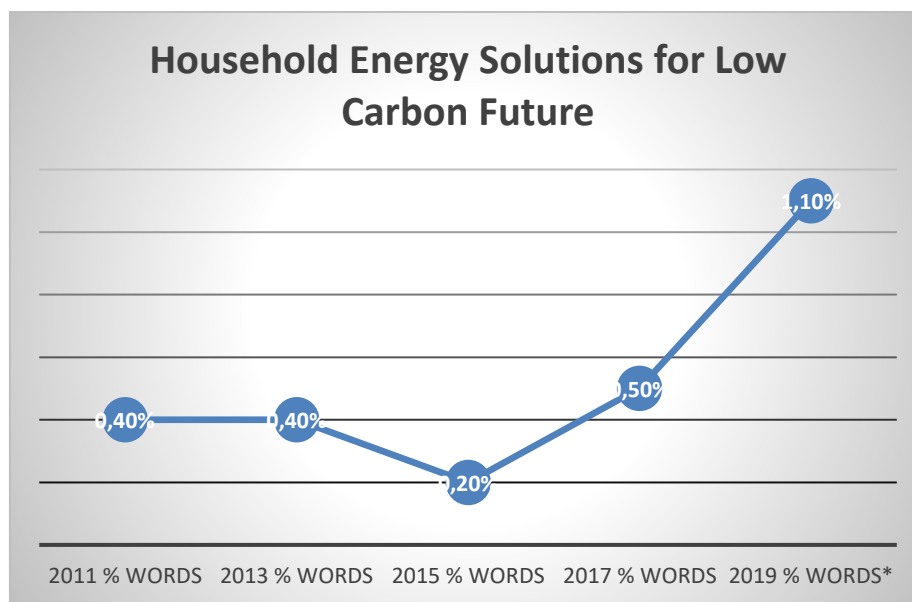


Figure 26. Year Based Analysis of Household Energy Solutions for Low Carbon Future Code

5 SUMMARY OF KEY FINDINGS

The content analysis revealed that multinational oil and gas companies introduced a combination of several stigma reduction strategies to cope with the intensifying societal disapproval linked to their climate change performances during the last decade. For that purpose, examined firms developed and implemented a variety of organizational methods from symbolic communication tactics to radical measures that extend beyond the categorical boundaries of the conventional fossil fuel operations. The research demonstrated that the popularity of certain strategies grew among studied businesses in time while others lost their relevance owing to intensifying external pressures such as strict public policies and rising stakeholder demands.

Companies utilized impression management strategies to restore their tarnished reputation. They formed alliances with diverse stakeholder groups, set GHG reduction targets, and disclosed their achievements accordingly. They emphasized their commitment to transparency, highlighted monitoring efforts, and reported their life cycle emissions in an increasing fashion. They introduced internal and external assurance activities to improve the credibility of their disclosures. It was noted that the communication approach of studied firms changed throughout the time span of the analysis. They avoided statements that excuse the contribution of the oil and gas industry to the climate crisis. Hence, arguments such as growing global energy demand or lack of effective regulatory structures were observed less frequently in recent years.

Innovations like CCUS technologies are emphasized as prominent tools and utilized as defensive practice adoption strategies. Examined corporations highlighted their corrective actions and mitigation measures to reduce the carbon footprint of their oil and gas operations. Specific attention was given to the flaring activities and methane emissions. Businesses stressed their dedication to grow the number of lower carbon products in their portfolios. To that end, they introduced carbon offsetting offerings for their customers.

As a critical finding, the analysis revealed that companies recognized the energy transition away from fossil fuels and towards the lower-carbon sources. They attempted to claim the membership of more legitimate sectors through the adoption of category straddling, a transformative stigma reduction strategy. Consequently, the promotion of renewable energy investments in their sustainability reports is detected gradually more in the later years of the decade. In addition, firms underlined their support for electrification as a significant trend to decarbonize the global energy system.

Furthermore, the research indicated that firms employed an even more drastic method in the face of severe contestation and disengaged from some of the controversial activities. Accordingly, companies announced their divestments from the carbon-intensive unconventional oil and gas fields, such as Oil Sands projects in Canada.

The following figure illustrates some of the key organizational responses implemented by selected corporations in accordance with the previously described theoretical framework (Figure 27).

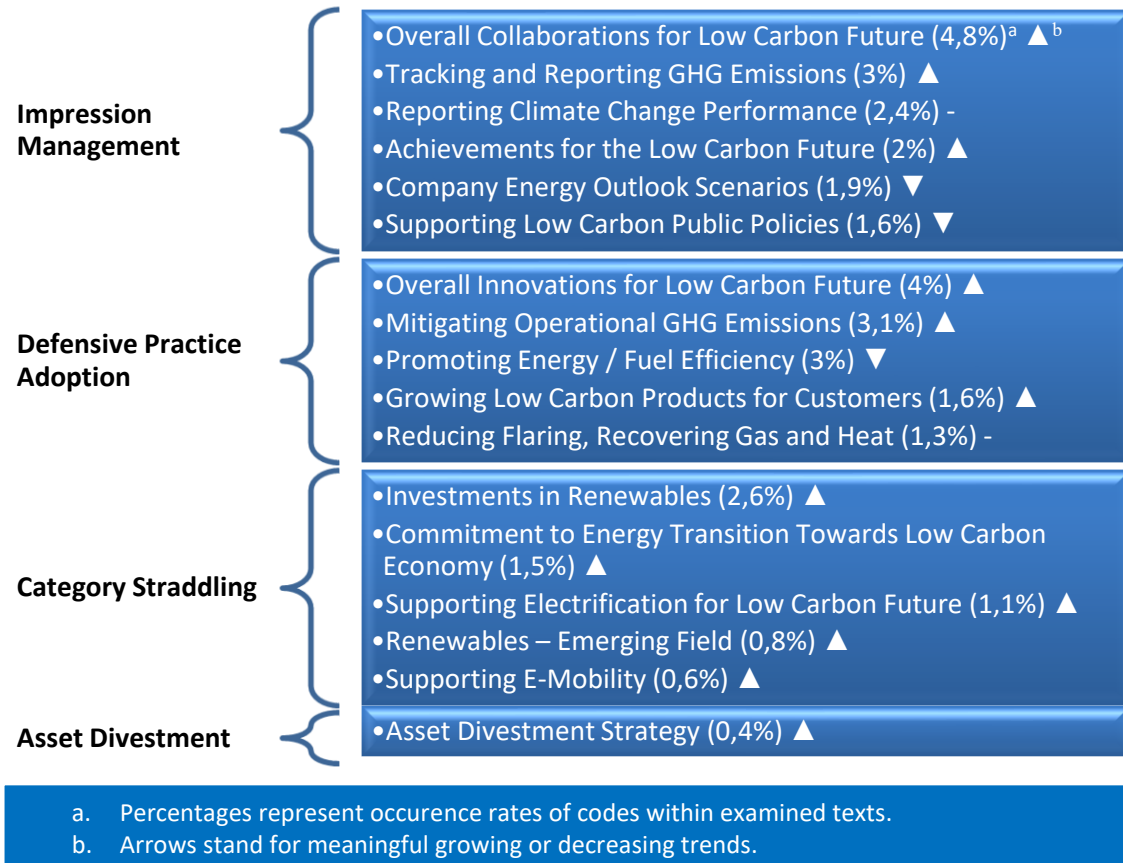


Figure 27. Organizational Responses to the Climate Change Related Stigmatization

6 DISCUSSION

The findings showed that companies attempted to enhance their legitimacy status by deploying several rhetorical impression management strategies. Collaboration efforts with various stakeholder groups stood out as the most recurrent approach for organizations in their climate change-related disclosures. Unlike the initial response of the US-based oil and gas companies to stigmatization based on challenging climate science through lobbying activities with policymakers, studied businesses adopted engagement strategies to demonstrate their commitment to climate action (Levy & Egan, 2003). Moreover, organizations sought to consolidate their position by emphasizing their support for the international agreements that aim for raising the global response to act on mitigating global warming. Year-based analysis indicated that the 2015 Paris Agreement became a significant driver for the oil and gas industry to increase the frequency of supportive disclosures on climate change conventions.

It was noteworthy that firms strived to improve their reliability level through the above-mentioned partnerships and by frequently tracking and reporting their GHG emissions. As a response to the societal demand for transparency, companies were increasingly willing to recognize their contribution to climate change and disclose detailed carbon footprint information concerning the life cycle of their products and operations (Lee & Klassen, 2016). Therefore, it can be interpreted that implementation of the concealment techniques was not considered as a viable communication strategy by the oil and gas companies during the last decade. Organizations might have preferred to avoid secrecy tactics since such practices may lead to deepened contestation considering the growing stakeholder scrutiny towards the tainted sector (Blithe & Lanterman, 2017).

Commissioning of an assurance statement by an independent organization is another widely practiced method for companies to enhance the integrity and credibility of the sustainability disclosing process (Jones et al., 2016). Accordingly, examined supermajor businesses also included evaluations of external auditors in their sustainability disclosures. However, the research findings showed that assurance statements of impartial and external assurance providers regarding the climate change performance became a less common approach during the time span of the analysis.

On the other hand, internal assurance activities, including in-house audits and monitoring practices, have grown considerably in popularity among oil and gas firms. In theory, performing assurance within a firm may offer complete access to the climate change-related data and be a cheaper option, although it may lack integrity, particularly with external stakeholders (Jones et al., 2016). Consequently, independent assessments losing their magnitude within the analyzed sustainability reports can be inferred as a contradiction for the earlier mentioned transparency and reliability pledges of the studied organizations.

Stigmatized businesses may also utilize excusing approaches which often entail accusing external parties of their condemned activities (Suchman, 1995).

Nevertheless, the results of the carried-out analysis revealed that the occurrence level of communication strategies that were based on excusing controversial features of the oil and gas companies decreased noticeably within the examined data throughout the designated time frame of the study. Accordingly, arguments that stress the need for the fossil-fuel industry to meet with the growing global energy demand became less frequent in later years of the decade. Similarly, firms were less likely to accuse external insecurities such as the lack of stable public policy structures to justify their contribution to climate change after 2015, which can also be evaluated as a valuable implication of the Paris Agreement. It was indicated that, rather than developing excusing tactics to reduce the intensity of disapproval, businesses preferred to set clear carbon reduction targets and disclose their achievements regularly to demonstrate their commitments to improve the disputed aspects of their conventional practices.

The analysis demonstrated that stigma reduction methods developed and applied within the categorical boundaries of the oil and gas operations were not merely limited to cosmetic impression management tactics. Stigmatized firms can also introduce new and concrete practices as a defensive approach to confront disapproval of hostile audiences who question the legitimacy of organizational behavior (Carberry & King, 2012). Cadez et al. (2019) addressed the adoption of emerging low carbon technologies as a viable pathway for GHG-intensive industries to reduce their carbon footprint. Hence, selected businesses advocated such technologies as a leading defensive practice adoption strategy. Organizations highlighted innovations and R&D accomplishments in an increasing fashion to emphasize their ambitions for GHG emission reductions. It was detected that advancements in alternative energy sources attracted the interest of studied firms as an emergent field during the course of the assessment. This meaningful trend revealed that some of the technological developments supported by companies went beyond the organizational limits of the defensive practice adoption and formed a foundation for the category straddling method's employment as a more transformative way to cope with the stigmatization.

On the other hand, disclosures of companies promoting the technical improvements to boost overall oil and gas production substantially decreased starting from the second half of the decade. At this point, enhanced oil recovery techniques can be identified as prevalent methods which are simply based on replacing the petroleum with the injected substance through increasing rock permeability and well pressure while lowering the viscosity of oil (Hiatt et al., 2015). It was notable that companies also introduced carbon dioxide injection as a recovery method. Accordingly, ExxonMobil (2011) promoted their Controlled Freeze Zone (CFZ) technology as a viable way to freeze and separate carbon dioxide from natural gas into a high-pressure stream and use it in enhanced oil recovery operations (p. 24). The recent change in organizational behavior confirms that businesses are inclined towards drawing the attention of hostile audiences to solid developments that reduce their carbon footprint rather than simply attempting to justify their operations by underlining the recovery techniques to extract further fossil fuel sources.

Additionally, corporations advocated innovations in carbon management and advanced fuels and lubricants areas as viable means to mitigate overall GHG emissions associated with their conventional activities. Oil and gas firms accentuated their controls, in particular, to manage methane emissions as a prominent GHG with a 28 to 36 times higher global warming potential (GWP) than carbon dioxide over 100 years (United States Environmental Protection Agency [EPA], 2020). They underscored their dedication to reduce flaring activities and recover wasted gas and heat for that purpose.

Abreu et al. (2021) recognized the product improvement as an organizational approach to climate change that entails developing less carbon-intensive goods. Accordingly, studied businesses emphasized their commitment to grow options of lower carbon products for their customers. Carbon offsetting offers stood out as relevant tools for organizations to improve their portfolios during the second half of the decade. Companies aimed to compensate for their emissions through purchasing carbon offsets which are based on projects that absorb or avoid the GHG emissions elsewhere (Liu et al., 2015). Firms supported the deployment of natural carbon sinks and green infrastructures as major NCS strategies to deliver carbon credits for their programs. Furthermore, the content analysis indicated that firms were becoming progressively more supportive of the household energy solutions that simply comprise energy advancements for consumers to generate, store, manage, and redistribute their power, including off-grid solar systems.

Increased operational efficiency is known as another common way in which companies can address climate change issues (Abreu et al., 2021). However, it was observed that analyzed firms were eager to introduce above mentioned novel corrective actions and innovations to enhance their contested public image rather than endorsing efficiency gains of their conventional activities. Hence, even though promoting energy efficiency and fuel economy was regarded as one of the more popular approaches for the oil and gas industry, it was also remarked that the intensity of supportive statements in this field diminished significantly during the later years of the decade.

One of the most valuable research outcomes is deemed as the increasing willingness of the multinational oil and gas organizations to adopt substantial and transformative responses to the climate change-related societal condemnation that demand radical actions beyond organizational boundaries of fossil fuel operations.

Examined firms utilized the category straddling strategy to distance themselves from the tainted features of their conventional practices through claiming the membership of widely acclaimed fields. Alexy and George (2013) stressed that stigmatized firms can adopt this method and trigger legitimacy spillovers from businesses with higher social acceptability. The oil and gas companies recognized energy transition trends towards the low carbon energy sources and progressively became more willing to disclose their commitments in that emergent field. Consequently, investing in renewable energy generation was observed as a prominent straddling approach for studied companies to deflect attention from

the stigma and dilute their association with fossil fuel-based operations (Vergne, 2012).

The findings uncovered that biofuel stood out as the renewable energy source with the highest level of attention paid by the studied oil and gas firms, which was followed by solar and wind power investments, respectively. Companies underscored feasibility advantages of biofuel production to justify their inclination towards the field, such as blending opportunities into conventional transport fuels without the need for any major engine modifications or significant alterations in the existing fuel delivery systems.

Eventually, renewable energy production became an outstanding theme for businesses' sustainability reports in recent years which was advocated even more frequently than the conventional natural gas investments of corporations. As a noteworthy insight, renewable energy investments of organizations were also supported by their efforts in the electrification area. Specifically, the e-mobility movement was progressively promoted by firms as a viable way to decarbonize the transportation field.

The analysis results showed that companies funded low carbon ventures and start-up businesses that offer services and goods in fields including but not limited to renewable energy, e-mobility, carbon management technologies, digital transformation, and energy storage. It was noted that low carbon venturing was emphasized more often during the second half of the decade, which can be evaluated as another clear indicator for the adoption of the straddling approach in the global oil and gas sector.

IPCC stressed the importance of the shift in energy production to meet with the primary goal of the Paris Agreement to keep the rise in global average temperature to below 2 °C and emphasized the requirement for expanding the proportion of renewable energy sources of electricity up to 70-85 % in 2050 (IPCC, 2018). Thus, the growing support of the prominent oil and gas companies towards this transition process through their investments, as major contributors to the climate crisis, can be regarded as a crucial inference for the analysis.

Moreover, the study demonstrated that firms went even further with their drastic organizational responses to the stigmatization by simply disengaging from their fossil fuel-based operations. Implementation of the asset divestment method and GHG reduction achievements linked to such decisions were highlighted by organizations in their sustainability disclosures with growing recognition. Companies were underlining that they were cutting their ties with some of the unconventional oil and gas operations, which produces a high level of GHG emissions. For instance, Shell reported that their controversial oil sands activities in Canada were ceased in early 2016 (Shell, 2015, p. 48). Intensified scrutiny of the stakeholders and media attention on conventional fossil fuel operations might led supermajor businesses to demarcate themselves from such illegitimate activities (Durand & Vergne, 2012).

6.1 Limitations and Future Research Opportunities

Taxonomy of organizational behavior in the face of severe societal condemnation towards the conventional oil and gas industry was examined thoroughly by the study, and valuable inferences were provided accordingly. Nevertheless, it should be remarked that content analysis was carried out for the company reports only, which led to certain research limitations. For example, signs for deceptive impression management strategies, including controversial greenwashing tactics, could not be identified appropriately by the assessment. Therefore, further research based on disclosures of scrutinizing external parties, such as analyses of media exposures, can shed light on the industry's manipulative organizational responses in a more reliable manner. Additionally, future investigation on the stakeholder reactions to the stigma reduction strategies may complement this study to evaluate the adopted organizational techniques' effectiveness.

Data collection of the content analysis was also limited with reports of the publicly traded multinational organizations that operate in the private sector. Thus, separate research on voluntary disclosures of leading state-owned businesses may offer distinctive insights since external pressures and incentives for the private sector may not always be applicable for such firms (Bae, 2014). Considering that some of the largest oil and gas corporations, based on their revenues, are government-owned organizations such as Saudi Aramco (Buchholz, 2020), findings of studies focused on that field would provide consequential inferences regarding the future of the energy transition trend.

7 CONCLUSION

This study revealed that multinational oil and gas companies integrated several forms of organizational responses to cope with the intensifying stigma in relation to the industry's major contribution to climate change.

Impression management strategies of the selected businesses were mainly focused on demonstrating their support for climate action through partnerships with external stakeholders. Supermajor firms emphasized their commitments for transparency in their climate change-related disclosures. They set GHG reduction targets, monitored their performance, reported their life cycle emissions, and highlighted their achievements. The research indicated that arguments that excuse the immense carbon footprint of the industry became less relevant communication tactics for the examined corporations. Therefore, companies avoided statements such as growing energy demand or lack of effective regulatory structures in the later years of the decade.

Organizations also embraced defensive practice adoption and introduced new tools such as CCUS technologies to mitigate their GHG emissions. They stressed their dedication to increase the number of lower carbon products in their portfolios and consequently launched carbon offsetting projects.

Furthermore, the findings of the content analysis showed that selected firms adopted substantial stigma management strategies that extend beyond the categorical boundaries of the conventional oil and gas operations.

Hence, they implemented the category straddling method and claimed membership of socially approved fields to legitimize their tainted public image. For that purpose, investing in renewable energy production and electrifying the global energy system became more common themes for their sustainability reports throughout the decade.

Companies even attempted to cut their ties with controversial activities in an increasing manner through performing drastic asset divestment strategies. Accordingly, they announced their disengagement from some of the GHG-intensive activities such as Oil Sands operations in Canada.

The growing tendency of global oil and gas corporations to utilize such transformative and radical organizational responses to societal disapproval holds great significance for the future of climate action. As the largest contributor of the climate change, the sector's recognition of the energy transition to a low-carbon economy is crucial to meet the Paris Agreement's long-term temperature goals and avoid the potentially catastrophic outcomes of the climate crisis.

Future research on the disclosures of state-owned companies may complement the findings of this study and lead to more comprehensive inferences regarding the responses of the industry while confronting the unwanted attention of society.

Finally, this study contributed to the theoretical framework of the stigma reduction strategies. It is noted that academia previously focused on securing

positive evaluations of stakeholders while research on how to respond to disapproval remained relatively limited (Vergne, 2012). Thus, this paper addressed that gap and presented stigma management strategies developed and implemented by condemned corporations of the global oil and gas business.

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APPENDICES

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