UNIVERSITY OF TWENTE.

Master of Environmental & Energy Management (MEEM)

Are Fossil-Fuel Energy Companies Riding the Green Wave or Just Surfing on Thin Ice?

Analysing Shell's Sustainability through Critical Discourse Analysis.

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Zwolle, July 2024

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Master Thesis

Academic years 2023 – 2024

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Abbreviation	Definition
GHG	Greenhouse gases
UN	United Nations
COP28	2023's United Nations Climate Change Conference
UNFCCC	United Nations Framework Convention on Climate Change
FFEC	Fossil-fuel energy companies
IPCC	Intergovernmental Panel on Climate Change
ISSB	International Sustainability Standards Board
CDA	Critical Discourse Analysis
COP24	2018's United Nations Climate Change Conference
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
AR	Annual reports
SR	Sustainability reports
CEO	Chief Executive Officer
FSC	Forest Stewardship Council
SDG	Sustainable Development Goals
SEC	US Securities and Exchange Commission
NCI	Net carbon intensity
NBS	Nature-based solution
NCF	Net carbon footprint

Abstract

This study analysed the sustainability and annual reports of Shell for the years 2021, 2022, and 2023 using Fairclough's three-dimensional model of Critical Discourse Analysis (CDA). The coherence between Shell's sustainability claims and tangible actions are analysed critically within the overall theme of sustainability. The research highlights significant inconsistencies, revealing signs of greenwashing amongst progress in some areas. Within the context of the COVID-19 pandemic, the Russia-Ukraine war, CEO succession, and the Milieudefensie climate case, Shell has acknowledged their global impact and importance of the role in the energy transition, aligning with international standards while simultaneously demonstrating greater transparency in recent statements. Despite these developments, Shell continues to rely on fossil fuels and carbon offsetting, raising questions about the true sustainability of their renewable efforts. In short, their sustainability performance remains more rhetorical than concrete. The findings also indicated strategic use of discourse, where more prominent messages are highlighted, while others are subtly embedded. This research underscores the complex and dichotomy of corporate sustainability within fossil fuel and energy companies, suggesting that further in-depth knowledge and time could yield additional insights.

Keywords: Critical discourse analysis, sustainability, energy transition, fossil fuel and energy company, Shell, corporate reporting

1. Introduction

Decades passed since the first international climate treaty, yet the issue itself is getting more alarming. From sea level rising, extreme weather events, to significant impacts on biodiversity and its ecosystems are becoming increasingly evident (IPCC, 2021). Such issues are primarily due to the increase in greenhouse gases (GHG) and air pollution caused by the combustion of fossil fuel, among others (Ramanathan & Feng, 2009). In recognising how urgent this matter-of-survival is, haste is called upon by the United Nations (UN). More specifically, the legally-binding Paris Agreement first "global stocktake" in the 2023's United Nations Climate Change Conference (COP28) showed that the progress across all areas in addressing climate change have been insufficient and concluded with "the beginning of the end of the fossil fuel era" (UNFCCC, 2023). With such mandate, the UN Climate Change Executive Secretary, Simon Stiell, states that all governments and business must put them into practice (UNFCCC, 2023), potentially highly impacting how fossil-fuel companies do their business now that their business "source" needs to "end". This is also even more prominent as COP28 marks the first time where the word "fossil-fuel" is explicitly used within COP's final agreement (UNFCCC, 2023). Further solidifying the need for business shift, particularly fossil-fuel energy companies (FFEC).

However, this is not such a surprise for businesses, as their view have shifted towards support for renewable energy transition within the past few decades (Si et al., 2023). More than 140 companies committed to the use of International Sustainability Standards Board's (ISSB) climate-related reporting at COP28 (IFRS Foundation, 2023). Some FFEC have been observed to actively move towards renewables. Shell Plc have been investing in green companies throughout the world, TotalEnergies' subsidiary operating over 340 renewable energy plants in France, Repsol S.A. exploring projects in green hydrogen, and Equinor building one of the world's largest floating offshore windfarms (Ross, 2022). Despite of clear and undeniable presence of efforts, are they sufficient in the eyes of the world? Based on the COP28 result, international organisations still ask more from these companies to be more proactive, stringent, and rapid in phasing out fossil fuels (UNFCCC, 2023; Amnesty International, 2023). Meanwhile academically, the claims and practices of such FFEC remains to be questioned in multiple literatures.

These questions seem to stem from contrasts between renewable initiatives and "greenwashing" activities. Here, the term "greenwashing" refers to the action in making false or deceptive claims about the environmental advantages of a product or practice (Lindwall, 2023). From observed profitability challenges to incoherency of international laws these companies struggle to balance seemingly-feasible climate efforts while maintaining public acceptance through greenwashing (Herzog-Hawelka and Gupta, 2023). Martinez et al. (2023) observed that beyond greenwashing, the fossil-fuel industry has been engaging in lawsuits against critics, promoting anti-protest laws, and supporting voter-suppressive policies worldwide, influencing governments to favour industry over public good. A case of such was displayed by the British government's restrictive laws on trade unions and preferential treatment of fossil fuels over renewables since 2015 (Owens, 2023). This dual approach of publicly endorsing renewable energy while seemingly supporting policies and practices that favour fossil fuel interests appears to be in contradiction with FFEC own efforts to support the energy transition and combat climate change.

Such dichotomy highlights the complex and often contradictory landscape in balancing renewable efforts, public acceptance, profitability and the FFEC's own timeline. All in all, there seems to be miscommunication or need of further clarity within these complex processes to perhaps bridge or eliminate the gap within the dichotomy. This perhaps lies in how FFEC communicate their efforts and

actions in facing sustainability challenges to keep the public informed, while ensuring their protocols and efforts are in alignment with internationally recognised climate entities, such as IPCC, ISSB, or UNFCCC, to further convince the public.

FFEC ideally should transparently share their (in)actions-of-change and limitations with the public to mitigate the aforementioned challenges in communication and clarification. "Action-of-change" refers to the real efforts they are making, while "inaction" refers to what they are unable to do due to specific limitations they have communicated. These communications are typically conveyed in any (in)formal publications through corporate communication teams who work to balance words with action on change with actual results, thus strengthening their credibility and their image (Foreman & Argenti, 2005). These publications range from formal reports, like annual or sustainability reports released through company channels, to informal ones shared on social media and by third parties. Albeit, formal reports will contain more comprehensive information in comparison to informal ones. Prominent multinational FFEC – namely BP, Shell, and ExxonMobil – have also been observed to explicitly used the UN Climate Change's Paris Agreement and the Intergovernmental Panel on Climate Change (IPCC) for guidance in setting their goals and strategies in their formal reports, namely annual and progress reports (BP p.lc., 2024; Shell plc, 2024b; Exxon Mobil Corporation, 2022).

In looking beyond the words conveyed in these communications, discourse analysis "reads between the lines" to reveal the underlying values, motives, and the substance behind what is actually communicated through companies' publications, statements, etc (Fairclough, 1992; Van Dijk, 1993; Gee, 1999). An example of such analysis has been done by Si et al. (2023) who noted the several FFEC tweets often claim both renewables and natural gas are essential for a cleaner future, despite natural gas being non-renewable, thus rationalizing its ongoing use. Another was done by Li et al. (2020) who observed a notable increase in the frequency of climate and clean energy terminologies used in FFEC's annual reports. All in all, discourse analysis has proven to be useful for exposing the gaps between fossil-fuel companies' actions and the claims they publicly communicate.

The aforementioned discourse research done by Li et al. (2020) is only based on the exact keywords present according to their identified themes, not necessarily on the nuance the sentence structure itself. The nuance of the sentence structure is, in my view, critical in discourse analysis, especially one that confirm controversial claims such as greenwashing. Using automated text analysis and discourse analysis, as done by Si et al. (2023) and Li et al. (2022), are perhaps enough for a bird's eye-view or an overarching perspective of greenwashing but, is arguably inadequate to capture the entire narrative and motives of the companies' communicated claims and actions. The exact words used (text); context of the subject and where it is said (discursive); together with historical events, the values and identity within the nuance of the subject (socio-cultural practices) are important to give further context in what the companies are actually trying to say within their predicament in selected time periods (Fairclough, 1993; Gee, 1999) – thus calling for a manual Critical Discourse Analysis (CDA) to capture these recognised context and critically reflecting on them.

In the idea of following up to the study of Li et al. (2020), along with the increase pressure from COP24, this research aims to dive deeper into Shell's sustainability claims and actions. The recent appeal from Shell of their 2019 case against Milieudefensie, a Dutch climate activist organisation, where the court ruled to the climate activist's favour for Shell to be responsible in the consequences of emissions of their users (Van De Hulsbeek & Koster, 2024) – also adds to the interest and importance of this research in diving back into the same study pool. This research will use more specified method of Discourse Analysis, which is CDA, to see if they are making waves in sustainability or just floating aimlessly. In other words, this research will use CDA to critically evaluate Shell's stated claims and actions to see if they, a prominent multinational fossil-fuel energy, is truly progressing in sustainable practices, merely

doing the bare-minimum to maintain a public façade, or something in between. This type of discourse analysis allows the possibility of uncovering the linguistic tactics used by companies to: construct a sustainable self-representation; maintain their legitimacy and credibility in the eyes of their stakeholders; and navigating socio-political issue (Fairclough, 1993; Castelló & Lozano, 2011). Therefore, allowing for a more thorough examination of the language, nuances, and context used by Shell in how they communicate their sustainable claims and actions during this time of energy transition and court appeal and how this is coherent with the actions reported by the company itself.

Thus, with the aim of a deeper understanding of Shell's sustainability efforts, this research set out course with the following research question and sub-questions:

How does Critical Discourse Analysis elucidate the (in)coherence between sustainability claims and tangible actions of fossil-fuel energy companies, such as Shell?

I. How does Shell discursively construct its role and responsibility in addressing sustainability challenges?
II. How does the tangible reported sustainability performance taken by Shell compare to their stated claims?
III. How does CDA de-construct Shell's discourse towards sustainability, and how does this relate to their reported (in)action-of-change?

The first sub-question will look at the text, its discursive context, and its socio-cultural practices as a whole to see how Shell "linguistically package" their efforts. The second sub-question will strip away these "linguistic packaging" and compare the stated actions against the claims within the selected formal reports. The third question will explore how effective is CDA as a methodology in deconstructing Shell's linguistic packaging and their relation in communicating Shell's efforts or (in)action-of-change. All these three sub-questions relate back to the main research question in how CDA elucidate the alignment or (in)coherence between the claims and actions of Shell, one of the most prominent FFEC in the world.

It is important to note that there are multiple definitions of sustainability, even between similar international organisations and standardisation agencies. The IPCC defined sustainability as "*A dynamic process that guarantees the persistence of natural and human systems in an equitable manner*" (IPCC, 2022), emphasisng the balance between ecocentrism and anthropocentrism. UNFCCC under the United Nations defined it as "*meeting the needs of the present without compromising the ability of future generations to meet their own needs*" (United Nations, n.d.), highlighting the intragenerational importance of sustainability. Whereas ISSB defined is as "*the ability for a company to sustainably maintain resources and relationships with and manage its dependencies and impacts within its whole business ecosystem over the short, medium and long term*" (IFRS, 2022), integrating sustainable practices within operational strategies and corporate governance. Collectively, these definitions show the diverse yet complex aspect of sustainability, highlighting elements in reflection their own mandates and focus. Thus, for this thesis, sustainability should encompass multiple aspects of ecological balance and intergenerational-anthropocentric equity which is applicable within the corporate context

The next chapter will provide a literature review. Followed by chapter 3 in explaining the methods and operationalisation of CDA within the scope of this study. Chapter 4 and 5 will breakdown the analysis and discussion of the subject in question. Finally, the final chapter will conclude this study along with possible recommendations and future researches.

2. Literature Review

As mentioned in the introduction, multiple academics still question the transparency and adequacy of FFEC's efforts in mitigating climate change and moving forward in the energy transition to meet the 2050 net-zero target. Several scholars have studied the transparency and adequacy of communication and efforts of FFEC's in mitigating climate change though multiple channels, such as academic literatures, informal reports, and formal reports.

One important study was conducted by Herzog-Hawelka and Gupta (2023), who did a systematic literature review of 152 publications and grey literatures obtained from SCOPUS database to examine how the transition strategies of multinational fossil fuel energy companies are responding to climate change and the shift away from fossil fuels. They followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol, a set of guidelines designed to ensure clarity, transparency, and thoroughness in systematic reviews and meta-analyses (Baker et al., 2023; Liberati et al., 2009, as cited in Herzog-Hawelka & Gupta, 2023).

They observed that multinational fossil-fuel companies are investing in renewables to leave these fossil-fuels underground and seeking more efficient energy use, but are disincentivised and cautious to do so (Herzog-Hawelka and Gupta, 2023). These difficulties seem to stem from two main factors: profitability and politics. The first profitability challenge entails personal financial interests from senior executives and short-term profit gains of stakeholders, whereas the political challenge includes strong governmental relationships between the company and influential governmental parties (Herzog-Hawelka and Gupta, 2023). Such relationship seems to affect the government's ability to set adequate climate policies and provide mechanism to hold companies accountable (Herzog-Hawelka and Gupta, 2023). According to Van Asselt (2021 in Herzog-Hawelka and Gupta, 2023), there are attempts to regulate fossil-fuels by international laws. But they are said to be incoherent, unsystematic, and is state-centric (Herzog-Hawelka and Gupta, 2023) – thus bringing this issue back to the aforementioned political challenges of governmental connections.

All of these in turn give companies less urgency or enforcement to speed-up their transition, prolonging the progress to renewables, even if it is possible for them to make a more-drastic change towards renewables. Nevertheless, Herzog-Hawelka and Gupta (2023) saw a trend where the companies still seek to secure legitimacy and maintain public acceptance by communicating their climate efforts through several medias. They then ended up resorting to political lobbying and "greenwashing" to appease the same aforementioned stakeholders (Herzog-Hawelka and Gupta, 2023).

A different approach was conducted by Si et al. (2023) using text analysis on a more informal form of communication, which is the tweets from four of the most prominent FFEC's social media – TotalEnergies, ExxonMobil, Shell, and BP. They used computational text analysis to filter and segment their tweets related to 'natural gas' and 'renewable energy' only (Si et al, 2023). Topic modelling was then used to identify communication patterns and strategies amongst the filtered samples (Si et al, 2023).

As a result, corporate communication strategies are observed to project an eco-friendly image while maintaining their reliance on fossil fuels. They observe a strategic shift from explicit climate denial to a more-nuanced discourse of climate delay from the tweets of prominent multinational fossil-fuel energy companies (Si et al, 2023) – indicating the use of social media to influence public perception. For example, Si et al. (2023) noted the companies' tweets often claim both renewables and natural gas

are essential for a cleaner future, despite natural gas being non-renewable, thus rationalizing its ongoing use and potentially delaying the transition to renewable energy. Additionally, each company highlights different renewable technologies in their tweets—TotalEnergies and BP focus on solar, ExxonMobil on biofuels, and Shell on hydrogen—reflecting their individual corporate strategies (Si et al, 2023).

In terms of looking beyond "what is said" using discourse analysis, another important study was done by Li et al. (2022). They observed a notable increase in the frequency of climate and clean energy terminologies used in the annual reports of four major FFEC – Chevron, ExxonMobil, Shell, and BP. Through the discourse analysis of 12 years' worth of these reports up to 2020 on the aspect of text, strategy and investment, they found a discrepancy between the narrative of clean energy and the company's actual fossil-fuel business practices (Li et al., 2022). More specifically, Li et al. (2022) found significant increase in discourse related to climate change, low-carbon initiatives, and energy transition. For example, there was a notable increase in discourse related to climate and clean energy, particularly in the "transition" and "emissions" categories, with notable keywords like "low-carbon energy," "renewable," and "clean" seeing a marked increase in mentions within Shell's annual reports. Meanwhile, Shell's chairpersons' messages evolved from focusing on oil and gas production in 2009 to pledging a reoriented mission towards a cleaner, lower-carbon world by 2020. However, these commitments were mostly rhetorical rather than supported by concrete actions as financial analysis reveal that the business models of these companies still heavily depend on fossil fuels, with minimal and opaque investments in clean energy (Li et al., 2022). All in all, Li et al.'s (2022) overall conclusion resulted in an incoherence between the actions of these companies against their sustainable identity between the years of 2009 – 2020, before the pandemic and the fossil-fuel-explicit COP24.

These studies have provided interesting insights into the possible factors contributing to the inconsistencies of FFEC's greenwashing accusation, communication patterns towards a climate-friendly image projection, and the use of discourse analysis in identifying discrepancies between narrative and actual company practices. However, the generalisation of fossil fuel energy companies, as applied by Herzog-Hawelka and Gupta (2023), may not be the best way since the transition efforts of a company will also depend on their financial capabilities and their stakeholder division (if they are state owned, private, public, or a mix). Thus, a more specific study is needed to further categorises or classify or benchmark the progression of each company in switching to renewables.

Discourse analysis has proven useful for exposing the gaps between fossil-fuel companies' actions and the claims they publicly communicate. However, this research done by Li et al. (2020) is only based on the exact keywords present according to their identified themes, not necessarily on the nuance the sentence structure itself. One could argue that the nuance of the sentence structure is critical in discourse analysis, especially one that confirm controversial claims such as greenwashing.

Moreover, automated text analysis and discourse analysis, as utilized by Si et al. (2023) and Li et al. (2022), may fall short in capturing underlying motives and overall narrative behind companies' communicated claims and actions – despite providing a more-board overview of greenwashing. To gain a comprehensive understanding of what companies are truly conveying within their specific circumstances during selected time periods, it is crucial to examine the exact language used (text), the context in which the statements are made (discursive), and the historical events, values, and identities embedded in the subject (socio-cultural practices) (Fairclough, 1993; Gee, 1999). Therefore, this thesis applies a manual Critical Discourse Analysis (CDA) to capture these recognised contexts and critically reflecting on them for one specific FFEC – Shell.

3. Theoretical framework

As highlighted within the previous section, it is paramount to understand if fossil-fuel energy companies such as Shell are adhering to their claims in the energy transition. Their positive and negative actions all need to be communicated to their stakeholders, including the public. The implicit motive and message they communicate to the public are the main questions that this theoretical framework, CDA, aims to uncover – by diving into the interconnectivity of their language, power, societal practices, and its relevance to their sustainability and claims in the energy transition. This chapter explains CDA and its operationalization for this thesis.

3.1. Discourse Analysis and Critical Discourse Analysis (CDA)

Discourse analysis, a rather recognised terminology, is a language analysis method to uncover patters and structure within the use of language and its social contexts (Fairclough, 1993; Gee, 1999). From the many perspectives of discourse scholars such as Michel Foucault, Jean Lave and Etienne Wenger, Herbert H. Clark, and many others – Gee (1999, p.21) encapsulate it as *"ways of combining and integrating languages, actions, interactions, ways of thinking, believing, valuing, and using various symbols, tools, and objects to enact a particular sort of socially recognisable identity".* It involves understanding not just the "what" (literal message), but also the "how" (sentence structure and nuance) and "why" (motive) behind the language itself. He describes discourse as the process where language is used as a means for entities or organisations to develop meanings and form identities (Gee, 1999). Such processes occur within specific contexts through interactions and use of various tools and technologies, which ultimately shapes behaviours from means of communication such as reading, and writing (Gee, 1999). Hence, discourse analysis put an emphasis more on the functional aspect of language in constructing social realities.

CDA takes a more-focused approach and investigates societal structures and power relations to uncover the ideological assumptions behind discourse practices under the same sail of discourse analysis (Fairclough, 1993; Van Dijk, 1993). Van Dijk (1993) highlights how discourse is able to increase societal gap, enforce inequality, and control access to social resources by those in positions of power – albeit in an illicit manner. Take an example of people or groups that might justify or implicitly deny inequality by portraying themselves more positively than others to legitimise their own position. This strategy of legitimation requires carefully structuring their language, argumentation, and overall narrative – or discourse – to shape beliefs and perspective that maintain power imbalance between those parties and the others (Van Dijk, 1993). CDA then offers a systematic approach for the pragmatic analysis of discourse to uncover possible hidden motives by these influential groups (Van Dijk, 1993).

CDA does come with their own limitations particularly on the issue of subjectivity. Some limitations outlined by Manjarrés (2007) include the risk of analysts' biases influencing their analysis (Pennycook, 2001 in Manjarrés, 2007), challenge in how language represents different aspect of the same context (Hymes, 1996, in Manjarrés, 2007), and the tendency to overlook informed readers' abilities in critically understand the text (O'Halloran, 2003 in Manjarrés, 2007). Other concerns involve imbuing complex meaning to simple texts, ignoring the analysed subject's viewpoints, shallow contextual analysis and limited interaction with multiple academic disciplines (Manjarrés, 2007). Providing a clear stance from the analyst would also help readers in comprehensively grasping the analyst's perspective, thereby clarifying the specific aspects and perceptions that would otherwise be questioned for subjectivity. In this regard, this research will address such limitations in section 3.4.

In my view, the thinking pattern needed to be analysed in Van Dijk's approach is implicit enough that there is a higher chance of subjectivity in analysing the subject. Additionally, connecting the perceived thoughts of the subject's audience to structure of society will depend on the underlying cultural context or social experience between the subject, the cultural or societal benchmark, and the analysts' perception towards such context – adding another layer of uncertainty.

Differently, Fairclough (1993) presents CDA as a way to explore how language, power, and society connect with each other – thus emphasising the importance of synthesising social theories and text analysis within linguistics. He used an interdiscursive analysis that examine how different types of discourse, interact, intersect, and combine within a particular text (Fairclough, 1993). Fairclough (1993) encompassed such analysis in a three-dimensional model of CDA – involving the textual, practical, and sociocultural aspect – which he used to analyse how universities communicate and market their "products" as they shift towards business-oriented operations (Fairclough, 1993). Through such model, he revealed a shift in educational practices towards neoliberal market-ideals over traditional academic values, affecting democracy, equality, and education sector's role in society (Fairclough, 1993).

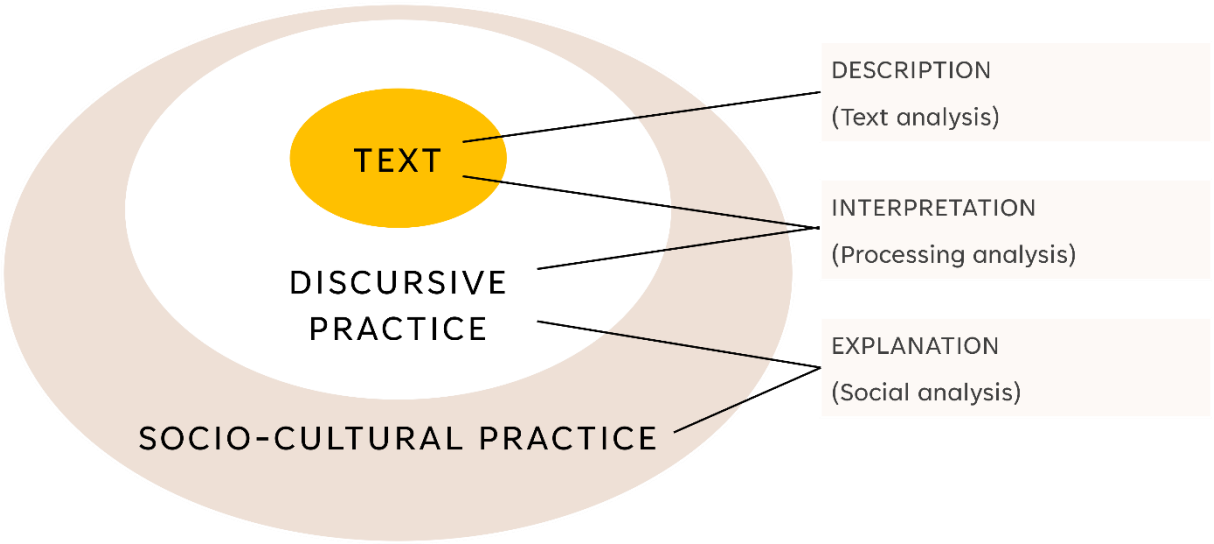
Arguably, Fairclough's approach has a more detailed and complex approach with emphasis on the details of the linguistic elements – i.e. vocabulary, grammar, style, etc – making it harder to grasp than Van Dijk's and, depending on the data, may miss out on important non-verbal communication elements – i.e. gesture, body language, tone of voice, etc.

As such, from my perspective, Van Dijk focus more on an individual scale as he focused on the reader's cognitive processes when they interact with the language used and how it is connected to social power and structures; whereas Fairclough focus on a bird's eye view where he zooms in on the language itself and how it's used and structed related to societal issue and power dynamics – to which I believe the latter is better suited for this research. In particular, a bird's eye view allows for a holistic and comprehensive analysis of the overarching themes and strategies related to sustainability across the entire document. Therefore, providing a more complete picture of how the Shell's discourse practices and their ideologies shapes their position in society and the government (Owens, 2023) along with the public's view of climate change (Martinez et al, 2023) – and vice versa.

3.2. Fairclough's three-dimensional CDA model and its operationalization

In reference to Fairclough's (1993) three-dimensional model of CDA, the framework itself can be compared to viewing an egg below the light of language as shown in Figure 1 – with the inner "yolk" made of text analysis, the middle "whites" with discursive practice, and the outer "shell" with sociocultural practices.

Figure 1. CDA Three-Dimensional Framework (as adapted from Fairclough, 1993)



Using **interdiscursive analysis** to identify the incorporation of discourse towards sustainability into Shell's operations, there are three dimensions within Fairclough's (1993) CDA model. The **text dimension** involves analysing **texts** produced by Shell, such as annual and sustainability reports, to observed how the linguistic elements—vocabulary, grammar, style—promote a sustainability-oriented discourse, using persuasive language to market energy solutions and their progress in the energy transition. The **discursive practice dimension** takes into account how changes in policy, economy, and broader society affect Shell's **practices** in the fossil fuel industry. The **socio-cultural practice dimension** account for the **historical** and **sociopolitical** context wherein these practices occur. Through **CDA**, this framework should unveil how shell discursively construct its role and responsibility in addressing sustainability challenges – with a **critical reflection** outlining the sustainability-driven discursive practices at Shell and possibly exploring its repercussions in the energy transition and the public role of fossil fuel energy companies alike in the broader sense of sustainability (Fairclough, 1993).

Thus, to further elaborate Figure 1's operationalisation in this thesis, let's take the hypothetical example of a Pizza company's tweet saying: "Slice into sustainability with our brand-new eco-friendly boxes!".

a. **Text analysis** (Description)
   This dimension involves carefully examining the "texts" produced by Shell in any form of communication. Grounded in systemic functional linguistics, this step focuses on how language is used in practice within the context of sustainability. Key linguistic features such as lexical choice (diction), grammatical structures (syntax), and cohesion (textual coherence) are closely observed to see how they integrate different meanings related to ideas, interpersonal, and textual meanings along with how they depict reality, shaping social identities and its relations, as well as organizing information. Taking the Pizza example, this dimension identified the lexical choice would be the relation between a pun of "Slice into sustainability" with a slice of a pizza related to the environment. It also questions if the word "boxes" means cardboard boxes or just a packaging term to encompass something.
b. **Discursive practice** (Interpretation)
   With practice referring to how texts are produced, distributed, and consumed, this dimension examines the socio-cognitive process in how discourses are constructed, interpreted, and how

they relate to the broader social practices of sustainability. It also takes into account any genre combinations, storytelling methods, and how the texts relate to each other – including the use of persuasive language to market energy solutions, the layout of the report, and Shell's reported progress in the energy transition. Additionally keeping in mind the texts' primary target audience, where in this research are Shell's stakeholders including investors, regulatory bodies, and civil society such as environmental groups and communities where they operate (Shell Plc., n.d.). Referring back to the Pizza sample, this dimension considers the decision to use social media to convey the message that highlight sustainability while packaging it in a witty element, such as a pun. It brings about the question if such decisions are brought by actual concern towards the environment, due to legal requirements, or simply following the market trends.

c. **Socio-cultural practice** (Explanation)
   Looking at the wider socio-cultural context encompassing the texts, this dimension explores the relationship between the texts' reflection and its influence on social structure and ideologies. This includes how discourse is operationalised in different fields and the events related to it, highlighting that discourse is actively shaping societal norms, identities, and power dynamics. For this research in particular, the norms and values are in preference to renewables and progress towards sustainability as supported by ideologies based on events of the Milieudefensie climate case, COP28, and notable events alike elaborated in the next chapter. Alluding back to the Pizza example, this dimension question how the tweet aligns with the sustainability values of both the shop's consumers and its competitors. It also examines whether the tweet might encourage further sustainable behavior among these groups, and if so, to what extent. Additionally, the dimension considers if its timing coincides with any sustainability-related events, and whether such events might have influenced the decision to draft-then-publish the tweet.

By sequentially deconstructing these layers, from the tangible text to the intangible socio-cultural setting it engages with, the framework facilitates a nuanced understanding of, not only what the language says, but how it is said, why is it being said, and what it means within the context of, in this case, sustainability (Fairclough, 1993). In concluding the Pizza example, this one-sentence tweet managed to serve several different purposes. These are to promote the pizza, branding the pizza as environmentally conscious and sustainable-forward, being entertaining, and addressing a significant social issue – sustainable packaging. Further analysis of public's reception of the message and its timings can also reveal insights into the cultural expectations and consumer behavior toward sustainability within the food service industry, specifically in the geographical location and target market of the shop. In this manner of CDA operationalisation, the alignment between the discourse and action reported by Shell within their reports across all three-dimensions should indicate if they are in fact, coherent or incoherent – with consistency to be observed among the identified discourses to see if this methodology has provided enough reasoning of the later synthesized conclusion.

4. Methodology

This research will adopt a qualitative analysis using CDA as the primary methodological approach to systematically analyse the language in text and communication of Shell to reflect their claims, actions, and discourse towards sustainability.

4.1. Case selection: Shell

Despite the overall attempt in sustainability efforts and transparency, one FFEC in particular has come under quite some scrutiny across the years dividing the public's action towards them. Some believe and even act upon the controversy while others stand-by them and continue to become loyal employees, supporters, and consumer of this global brand.

Shell plc is a global "energy and petrochemical companies" group with operations in more than 70 countries (Dun & Bradstreet Inc, 2024). They joined 34% of the world's largest companies committed to Net-Zero target emission by 2050 and plans to invest 10-15 billion USD in low-carbon energy solutions between 2023 and 2025 (Aizenberg & Luu, 2022; Shell plc, 2024). They have also been investing in development of such low-carbon technologies as well as social and environmental project, however they are still expanding their non-renewables business portfolio and seems to be heading in the direction of exceeding the Paris agreement 1.5-degree limit (ClientEarth, 2023). Their petrochemical business is also said to be excluded from its "Net Carbon Footprint", while seemingly denying accountability by focusing on society's pace in preferring renewables over the non-ones to dictate their energy transition progress (ClientEarth, 2023).

Such dichotomy and more has led to scepticism among many parties throughout the world, producing greenwashing accusations, protests, complaints to legal entities, even bans from government parties. One of these protests are due to their intense green-initiative advertisements that did not align with the company's actual green portfolio, which led to a gathering of 80 activists from 12 EU countries in the company's main port in Rotterdam, Netherlands (Walfisz & Campbell, 2021). Another case is from climate activist organisations bringing Shell to court for the purpose of legally binding the company to adhere to the Paris agreement's CO2 emission target by 2030, which the court ruled in favor of the organisations in 2021 and appealed in 2024 (Milieudefensie, 2024).

Despite of the controversy and criticisms, there are others that do not villainise the company. An example is seen from a couple of professors from the University of Twente, who are also employees of Shell, who recognised Shell's positive efforts in the energy transition, the enthusiasm of their students in research collaboration with Shell, and the fact that this criticism did not deter them from being proud as a part of Shell (Kuipers & Waning, 2023). In Kuipers & Waning's article (2023), they emphasise that their job in Shell does not influence their role at the University, together with the fact that those reporting that ended up incriminating fossil-fuel companies are publicly available and encourage conducting academic research to confirm those controversies instead of only demanding a shutdown of the company. Therefore, this research will take a deep dive into the annual and sustainability report of this particular company via CDA.

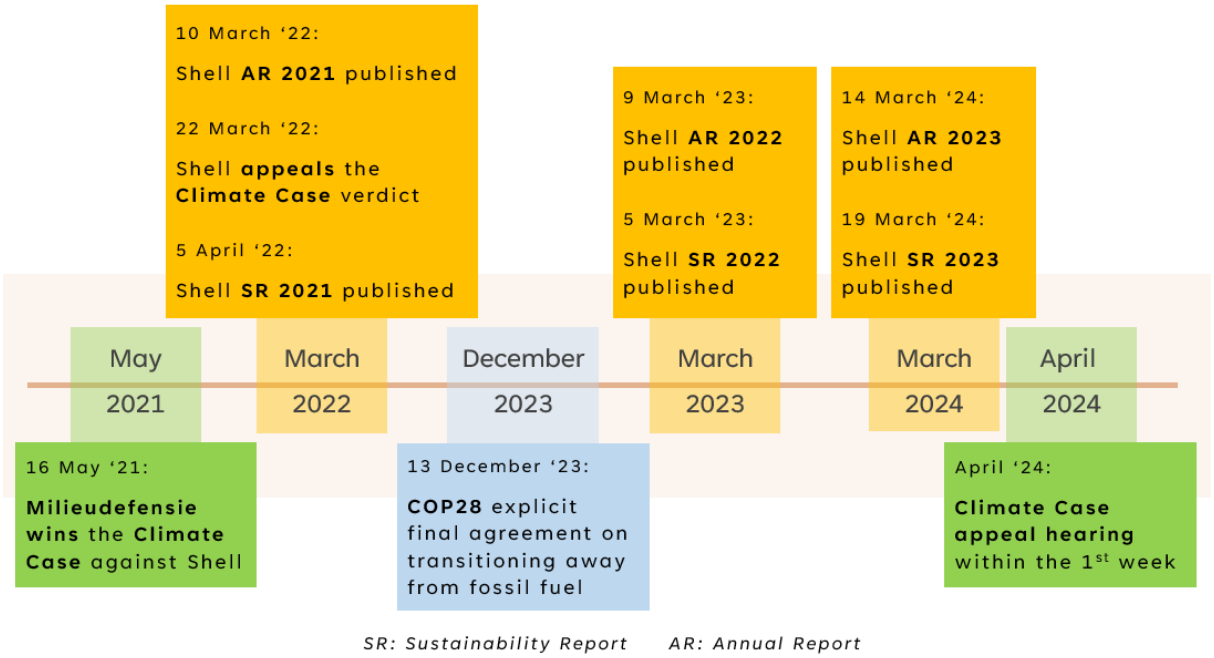
4.2. Data collection

This research will only be utilising secondary data from Shell's publicly available sustainability and annual report of **2021, 2022,** and **2023**. These reports are selected since the sustainability reports (AR) focus specifically on their social, safety, environmental, and overall sustainability performance outlined in their respective annual reports (Shell plc., 2024b). Whereas the annual reports (AR) contain more broader yet detailed information on Shell's and its subsidiaries performance and efforts throughout the year along with their future plans (Shell plc., 2024c). Consequently, including both reports will give a more complete detail on Shell's claims and efforts in relation to sustainability.

This method of data collection is preferred for this research for three reasons (Bowen 2009). First, an examination of documents across different timeframes allows researchers to engage in longitudinal study to track transformation across different time periods – such as in the study by Li et al. (2022). Second, it provides access to information specific to notable cultural, social, and historical events – i.e. COP28 and the Milieudefensie climate case. Third, and particularly, it is an unobtrusive method which eliminates risks of influence from other parties which is critical for CDA.

As indicated within the timeline of Shell's report publishing against the aforementioned events in Figure 2, the 2021 reports are selected due to the climate case verdict where Shell was made legally compliant to reduce their emissions (Milieudefensie, 2024). This perhaps should affect how they construct their reports – differentiating them from the 2020 data result of Li et al.'s (2022) research. Whereas the 2023 report is observed to be published after Shell's 2022 climate case appeal and close to their first hearing in 2024 - in addition to being after COP28's explicit final agreement, leading to an intriguing outlook on if and how Shell construct their reports after such critical occurrences. The 2022 reports are also included to eliminate any gaps or possible discrepancy between the two relevant events. Both sustainability and annual report are also taken into account in this research as to be thorough in keeping in mind the research's interest in such sustainability context and energy transition. The selected reports' publishing dates are shown in Figure 2, with the annual reports' dates in the yellow box and the corresponding sustainability reports' date in the Asterix right above it.

Figure 2. Timeline of Shell Annual and Sustainability report publishing and relevant events (adapted from Shell Plc, n.d.-a; Milieudefensie, n.d.; UNFCCC, 2023)



4.3. Data analysis

After obtaining a total of six reports from Shell's publicly available archive, I proceed to manually read the reports without a pre-determined codebook. Within the overall theme of sustainability per the definition mentioned in the introduction, the focus is mainly on sections and chapters discussing these aspects, such as energy transition, climate change, renewables, energy solutions, environmental and sustainability challenges. As not every single part of the report needs to be analysed (Fairclough, 1992 in Higgins & Coffey, 2016), parts in alignment with the overall theme in this study are the majority of

SR and the 'introduction' and 'strategic report' segments of AR. This also includes Shell's corporate strategy in addressing such themes as well as any text disclaimers, report-exclusive definitions, and phrases that may impact how the report's reader perceives said sustainable-themed content. For example, the 2023 Sustainability report outlined the terms "Shell", "Shell Group" and "Group" used to refer Shell Plc and its subsidiaries without identifying any specific entity (Shell plc., 2024b). This means that the claims and action where such terms are used refer to Shell's entities as a whole and should be seen as a joint effort, unless specified otherwise. Messages from the representatives of the company, particularly from the Chair and Chief Executive Officer (CEO) are also taken into account in the analysis.

To continue, I thoroughly review the reports, starting from SR 2021, then to its counterpart AR 2021, proceeding with the next year and so forth. Using an excel document, general observation within the theme mentioned earlier are organised per topic and pages; where categories of Fairclough's (1993) three-dimensional CDA framework are applied with respect to the individual points observed. This bottom-up approach aims to maintain objectivity by avoiding any preconceptions before the analysis. After the initial observation and categorisation, I proceeded to synthesise it into varying themes and details along with their presence within each report, adding remarks where necessary – as presented in table 1. Specific chapters and contents are also organised with colours and markings for ease of observation and guidance in the result and discussion in later sections. This can be seen in appendix 2 to 5. Finally, comparison of reported statistical performance relevant to the theme is included to support the results presented through the CDA in answering the research questions, specifically sub-question ii.

The result will then separately answer how Shell discursively constructs its role and responsibility in addressing sustainability challenges; if their action matches with their claims; and the critical reflection of their discourse towards sustainability. The CDA result will be divided into 4 categories: the general result of all six reports and a separate section to each corresponding year. The general result contains common threads and elements present throughout the two reporting types, with minor discrepancies noted and addressed where relevant. Whereas the separate sections entailed results unique to the respective particular reporting period, including comparison to year-respective SR and AR. Lastly, the reported highlighted performance statistics, relevant data, and notable events concluded the result chapter of this study.

The discussion concluded each sub-questions and the main research question of how (in)coherent are the sustainability claims and tangible actions of Shell based on CDA – consequently, whether CDA does manage to properly elucidate it. Finally, the conclusion will tie together the common thread in this research.

4.4. Limitations

To ensure for as much objective research as possible, this section will outline the research's limitations, the analyst's proficiency with the language used in Shell's 2021, 2022, and 2023 annual and sustainability reports, along with a description of the analyst's on the topic of Shell, their claims and actions.

This research, whose scope covers events like COP28 and the ongoing Milieudefensie climate case, covers only a short period ending by August 2024, before the expected verdict of the climate case in September 2024 (Milieudefensie, n.d.). As such, it may not comprehensively cover all areas of interest, especially climate case-related, specific regional or environmental impacts. Additionally, the content of Shell's annual and sustainability reports specified in this research may be influenced by local and

regional regulations and the discretion of Shell's stakeholders and relevant departments in the report drafting process – which could lead to potential gaps in accountability. Furthermore, discourse analysis and its derivatives, such as CDA, are a comprehensive and time-intensive process (Higgins & Coffey, 2016). In combination with a total dataset of 1,442 pages to analyse within the time constraint of this research mentioned in Appendix 1, more results with a similar or broader theme could be observed. However, I ensured that all analysis within the research will be supported by at least one or more discourse from the 2021, 2022, and 2023 annual and sustainable reports.

In section 2, the challenge of different language interpretations within the same context, as noted by Hymes (1996, in Manjarrés, 2007) was mentioned. As an analyst, it is important to note that I am not a native English speaker. However, I have been learning English under a British curriculum since the preadolescence age of around 7 years old, and I have achieved a proficient level, evidenced by an IELTS score of 8.0. This score signified my strong grasp of the English language, effectively managing complex arguments despite occasional errors and misunderstandings in unfamiliar contexts (IELTS, n.d.) – to which corporate annual and sustainability reports is familiar to me. Additionally, I will consult the Oxford English Dictionary as necessary to clarify language use.

4.4.1. Stance of researcher

As previously discussed in section 2, high possibility of reflexivity in conducting the analysis of this research resulting in a subjective result (Manjarrés, 2007). Thus, I will also elaborate my stance, position or expectation to Shell and this research aside of what has been stated.

In elucidating the (in)coherence between Shell's claims and actions, despite not having any expectation nor presumption in regard to the actual CDA result, my only expectation is that the discourse of the sustainable report of one year should either support or is in alignment with the annual report of its particular year. In terms of position and stance, I have heard and seen both good and bad things about Shell, both in my previous work experiences and social media – therefore I do not have any opinion on the matter but the curiosity based on current events as stated in earlier sections. My previous work experience was also related to crafting and reviewing corporate annual reports, although I have no experience with Shell's or such companies alike. My cultural background also comes from the Global South where sustainability is unfortunately still not a main priority particularly on an individual level, therefore allowing me to be critical yet arguably as objective as possible. Additionally, I purposely have avoided any news or publication – except for unavoidable public advertisements – related to fossil fuel energy companies and their controversy since the pursuit of this degree.

5. Results

The result of this thesis provides the observation within the context of sustainability, as defined in section 1, employed by Shell in their published sustainability reports (SR) and annual reports (AR) within the year 2021, 2022, and 2023. Firstly, we will discuss the common elements from both SR and AR across the 3 years. Continued with the unique elements of each years' reports and closed by the 'efforts' in the form of notable examples and reported performance extracted from both reporting types. Though some are specified, not all result will have specific identification of textual, discursive, and socio-cultural practices due to the interconnectivity and overlapping nature of CDA. An overview

of the main text-discursive result can be seen in table 1 at the end of this chapter for ease of observation.

5.1. All three SR and AR in general

Starting with the visuals, there are similar design and content between SR and AR within the same year and across the 3 years. Identical contents can also be found between these two corresponding SR and AR. However, their headings or segments differs from one another. The use of images and visualisation also differs between each year which will be specified textually and discursively in each years' section. There is very thorough reference to multiple other reports by Shell, including their own website in both report types – despite of the presence in a disclaimer stating that the content of such other websites referred to in the Report is not part of the report themselves. Interface-wise, SR have embedded links within the report along with each of their topic segment in the header of each page, whereas AR does not have any. This **discursively** provided **more accessibility** for readers within **SR** than AR. Many references to links outside the report and linked accordingly in SR but is comparatively less in AR.

Discursively within both type of reports, **international credible standardisation** are **consistently** referenced and is said to be adhered to, particularly from UN Sustainable Development Goals (SDG), IPCC, OECD, goals reflecting the Paris Agreement, UN Human Rights Standards, and compliance with the US Securities and Exchange Commission (SEC). **Textually**, they also put a constant emphasis on reflecting and matching the **Paris Agreement**'s 2050 net-zero target, to which they continuously stated their goal to *"become a net-zero emissions energy business by 2050"*. This is also coupled with multiple reiteration of referencing **IPCC** and **SDG** as the top 3 mentions shown in appendix 6. The only **textually-discursive** difference between the two was that AR has a Forest Stewardship Council (FSC) and World Land Trust logo which the SR does not.

Textually, all reports specified **disclaimers** in regards to the credibility of information. They stated that "***Past performance cannot be relied*** *on as a guide to future performance"* along with the following:

> *This Report contains* ***forward-looking statements****…concerning the financial condition, results of operations and businesses of Shell. All statements* ***other than statements of historical fact*** *are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that* ***could*** *cause actual results, performance or events to* ***differ materially*** *from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as "aim", "ambition", "anticipate", "believe", "could", "estimate", "expect", "goals", "intend", "may", "milestones", "objectives", "outlook", "plan", "probably", "project", "risks", "schedule", "seek", "should", "target", "will" and similar terms and phrases.* (Shell Plc, 2022a; Shell Plc, 2022b; Shell Plc,2023a; Shell Plc, 2023b; Shell Plc, 2024b; Shell Plc, 2024c)

Such forward-looking phrases, not including the unstated ones, are mentioned up to 14,194 in both reports across the three years as indicated in appendix 6. They also addressed the fact that their operating plan, a forward-looking statement, is only forecasted on a **ten-year period** with yearly updates. Thus, it cannot reflect their 2050 nor 2035 target per the dataset of this study. It is also noting that only emissions from Shell's operations (scope 1), from energy purchased for running such

operations (scope 2), and their net carbon intensity (NCI) are included in these plans. Therefore, **setting aside** the emissions produced by customers' use of their products (**scope 3**). They also stated that **society's progress** towards net-zero will **reflect** Shell's operating plan, along with their potential to not meet such target if society does not either.

These disclaimers are all placed in the 'Cautionary Note' chapter of SR and the 'About this report' chapter of AR. Unlike the AR, this 'Cautionary Note' chapter is **discursively** more **hidden** in SR as the section is not listed in the table of contents, nor in the section header of the last chapter.

SR's 'Cautionary Note' chapter also included the definition of "**Carbon neutral**" or "**CO2 compensated**" keywords included in appendix 6. Shell **textually** defined these two keywords as their **effort to offset** the **emissions** created from their products' lifecycle through purchase of carbon credits from CO2 compensation projects. They recognise that such action does not eliminate environmental impacts and is not a replacement for "*switching to lower-emission energy solutions or reducing the use of fossil fuels*". They will focus on reducing emissions as much as possible first, and only then compensating the remainder.

Moving on to the 3-year SR **table of contents** in appendix 3, most of the contents are similar with small changes across the 3 years, mostly occurring in the 'Strategic Report' segment. In accordance with the report type, SR **discursively** comprises of **sustainable elements** packaged together under Shell's **Powering Progress Strategy**. This strategy is Shell's main **energy transition plan** to net-zero emissions while still delivering values to their shareholders. It **textually** comprises of '*achieving net-zero emissions'* by 2050*; 'respecting nature'* by environmental protection, conserving water, and preservation of biodiversity; '*powering lives*' through providing access to energy; and '*generating shareholder values'* by optimising their **existing** business and maintaining strong financial position. These elements became the segments in how Shell elaborates their initiatives and efforts. The same Powering Progress Strategy is also the main highlight in AR 2022 and AR 2023 – treating it **discursively** as a **segment** the same way as the SR does. Unlike their counterpart shown in appendix 4, AR's table of contents across the years undergo multiple updates but has the same core content with each other. The contents are consistent with messages from both their Chair and CEO, company result per business sectors, risk factors, governance, financial statements, and other additional information legally mandatory to be included in their ARs. One of the contrasts between SR and AR are the specific messages from their C-Level members. SR only has 'Letter from the CEO' while AR has both messages from the Chair and CEO. However, the **text-discursive pattern** in their messages is **similar** to each other and throughout the 3 years – despite having a change of CEO in AR 2022 and 2023.

With presence of minor changes to be mentioned in later sections, the general **textually-discursive-sociocultural pattern** of both individual messages are: **world issu**e (such as the Russian-Ukraine war or global situation) and its **impact to Shell** and vice versa; **updates or events** within Shell (accidents, acquisitions, CEO change, etc) and **actions** in mitigating them; their **Powering Progress strategy** and/or progress in the energy transition; their **impact to nature**; contribution to their **employees** or the **public**; and finally closed with a **personal message** from each respective person. Consequently, there are minor noticeable difference on the subject of Safety within the SR's CEO messages across the 3 different years. This can be seen when the topic of Safety was mentioned prior to progress in the energy transition in SR 2021, then it was brought up right before personal messages in SR 2022, and lastly was not addressed in SR 2023.

Among other **textually-discursive** things, the contents of '*About this report'* chapter in all AR is considerably different with the same chapter name in its corresponding SR. Though both chapters contain statement on the type of report and reporting guidelines, every paragraph in this chapter

within AR starting from defining the term “Shell” exists verbatim in a new chapter at every end within its corresponding SR. This chapter is called ‘*Cautionary note’* and is not listed in the table of contents, as indicated in appendix 3.

Coming back to the **Powering Progress strategy** prominently present in all reports, there seems to be **two** different **versions** of the diagram and two different sequences of the element-contents comprised within the strategy. Original images and complete comparison taken from all reportings can be found on appendix 5. As read with the direction of top to bottom and left to right, figure 3 showed the first version of the Powering Progress diagram, which **discursively** set the *‘respecting nature’* element before ‘*powering lives’*. The image itself also showed that these two elements along with their description are placed within the same row of each other. This first version can be seen in SR 2021, SR 2023, and AR 2023.

Figure 3. Powering Progress strategy version 1 (from Shell Plc, 2022b; Shell Plc, 2024a; Shell Plc, 2024b)

The second version shown in figure 4 showed a minor difference in placement of the description of the same Powering Progress elements, with ‘*powering lives’* placed above ‘*respecting nature’*. Thus, **discursively** altering the reading sequence to ‘*generating shareholder value’*, ‘powering lives’, ‘*respecting nature’*, and ‘*achieving net-zero emissions’*. This second version can be seen in AR 2021, SR 2022, and AR 2022.

Figure 4. Powering Progress strategy version 2 (from Shell Plc, 2022a; Shell Plc, 2023a; Shell Plc, 2023b)

Regarding the content sequence, all reportings are **discursively consistent** with between the years, but **not the report types**. In other words, all SR has the same element-sequence in their reporting segment of '*achieving net-zero emissions*', '*respecting nature*', '*powering lives*', and, '*generating shareholder value*' as shown in figure 5 and appendix 3. Whereas the corresponding AR has '*generating shareholder value*' placed earlier, followed by '*respecting nature*', '*powering lives*', and closed with '*achieving net-zero emissions*'. This can be seen in both figure 6 and sub-chapters under the '*Strategic report*' segment of 2022 and 2023 in appendix 4.

Figure 5. Segment header in Shell's sustainability report 2021, 2022, and 2023 (from Shell Plc, 2022b; Shell Plc, 2023a; Shell Plc, 2024b)

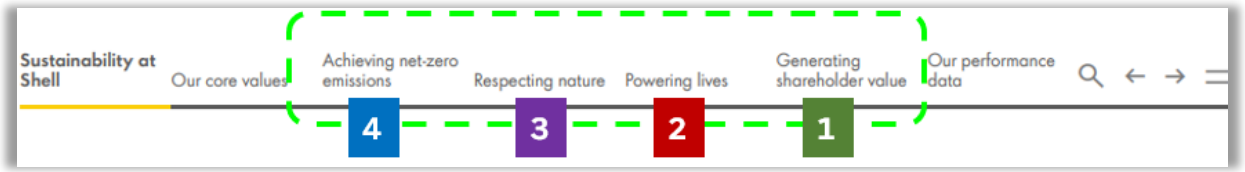
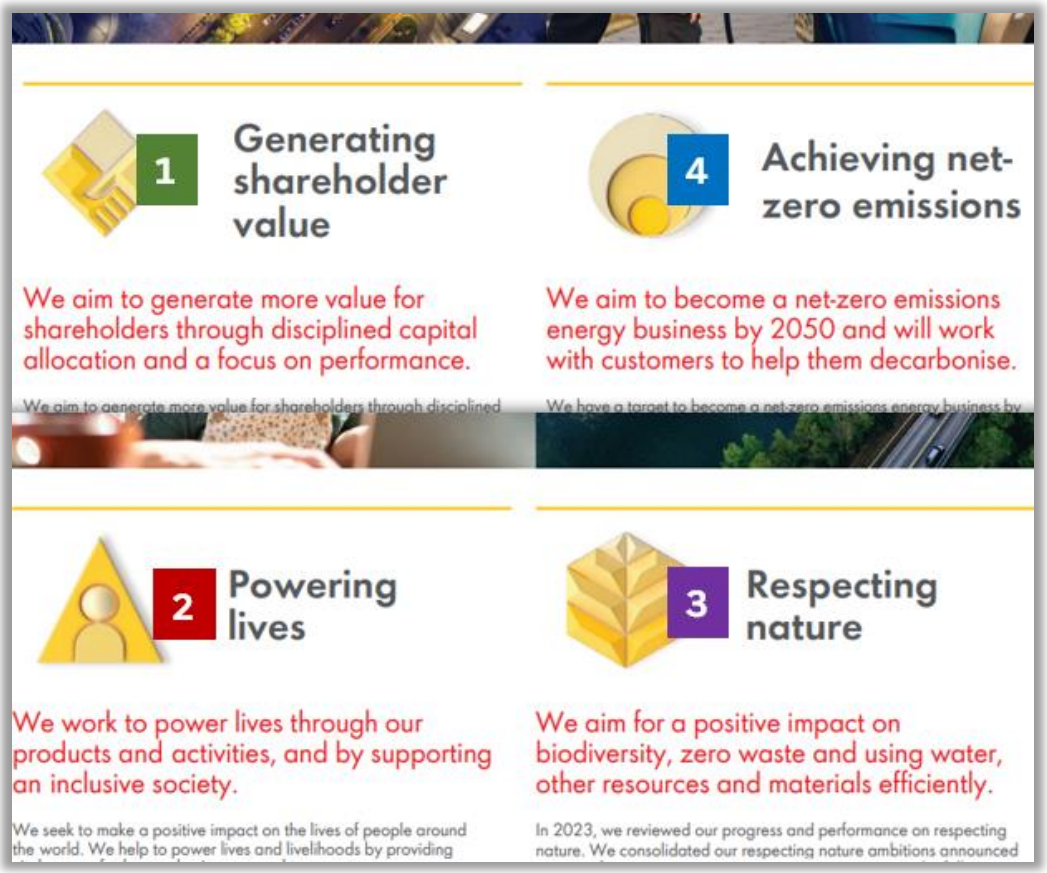


Figure 6. Powering Progress content in Shell's annual report 2021, 2022, and 2023 (from Shell Plc, 2022a; Shell Plc, 2023b; Shell Plc, 2024c)



Consequently, there are common themes identified across all six reports from reporting period of 2021, 2022, 2023. Table 7 in appendix 6 listed these themes, the details entailing its identification, relevant identified keyword(s) and their presence tallied within each respective SR and AR – keeping in mind the 4 times difference in the number of pages of both reports. The table showed **discursively** about 36% of the 123 keywords identified over three years have similar patterns in how often they are mentioned in both types of reports. There are **textually** no explicit mentions of global collaboration but is present implicitly by addressing parties from different and multiple countries. The theme of net-zero emission, targets, renewable energy, research and digitalisation are steadily increasing as the year progresses. This is true for most of the themes within the context of sustainability. Although it is **not in line** with their continuous highlight of the theme of non-renewable operations and lower carbons, including ongoing investments in oil and gas projects. Finally, the theme of circular economy is the only one that has more number of mentions in SR than AR.

Corporate responsibility is also a recurring theme, with the exception of a declaration that Shell is a member of the Taskforce on Nature-related Financial Disclosures Forum (TNFD) only mentioned in SRs. Keywords within the theme such as “dialogue”, “transparency” and “accountability” are **textually** mentioned comparatively similar between SR and AR, despite AR having more than four times the number of pages. On the other hand, the SR and AR difference in keywords reflecting corporate integrity, such as “governance” and “compliance”, do reflect such page-contrast. Themes of financial and operations are mostly mentioned in AR along with the **sociocultural** impact of Russian-Ukraine

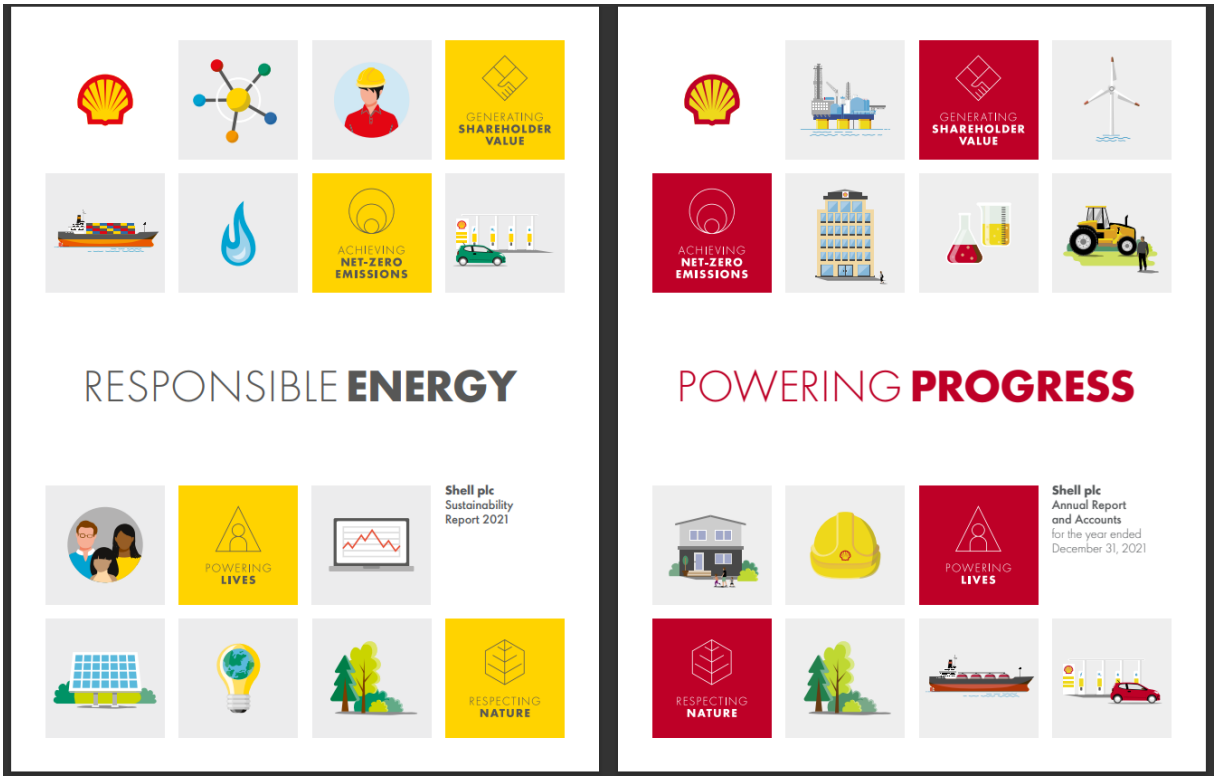
war and the Covid-19 pandemic. However, the Milieudefensie climate case is completely absent from SR and is only mentioned a few times within the AR.

Within the theme of energy transition and lower carbon, the term "lower-carbon products" is **textually** observed to be used throughout the reports as a phrase that also encompass liquefied natural gas (LNG). The report also stated "*the remuneration comittee originally set a target of 25 mtpa CO2* ***offset by carbon credits*** *through* ***carbon-neutral*** *customer offerings*" is **text-discursively in line** with their previously mentioned efforts in offsetting emission and definition of "carbon-neutral". The total mention of **non-renewable** operations is still **more** than the mention of specific types of **renewables**, as indicated in table 7. This is also consistent with the rankings in table 6, which clearly showed a high importance on "oil and (natural) gas" and LNG. Keeping in mind the higher rankings and consistency still belonged to "environment", "safety", and "energy transition". Furthermore, many of the words used within **SR** seem to be more to the context of **daily life**, such as "raising living standards" and global challenges such as "inequality". Whereas the **AR** are observed to use words related more towards **sector application** such as "business potential", "profitability", and "trading". This is also in line with AR's considerable addressing of the theme of corporate responsibility as well as financial and operations.

5.2. Shell Sustainability and Annual Report 2021

Both SR and AR 2021 have **discursively** similar minimalist design with Shell's prominent colour branding of red and yellow as their main theme. As seen in figure 7, they **textually** set SR as yellow with the title of "Responsible Energy" and AR as red with the title of "Powering Progress", their main strategy to reach their 2050 Net-zero emission target. Both covers' visual images are filled with corporate-generated individual vectors, alternating with the elements from the Powering Progress strategy. The vectors in SR are observed to be icons related to renewables and sustainability, such as the electric vehicle charging station, a family, solar panels, a lamp with Earth inside of it, and trees. AR's vectors are more varied in comparison with icons of helmet, oil rig, office building, chemicals, house, and a tractor.

Figure 7. Covers of Shell's sustainability report and annual report 2021 (adapted from Shell Plc, 2022a; Shell Plc, 2022b)



There are observations found uniquely present only within the 2021 reporting, with no mention of such phrase or topic in later reportings. First is the customer and society theme referred to in table 7, particularly where both reports reiterated Shell's 2050 net-zero emissions target in sequence with "in step with society" repeatedly and thoroughly. Messages present within the reports stating the importance in letting the customer lead the supply-and-demand balance of renewables, along with emphasis on how society and governments play a major role in the success of the 2050 target, energy transition and emission reduction. They also **textually** putting an accountability on society through the "society's" keyword. Secondly, the Sky 1.5 scenario is one of the scenarios out of Shell's multiple scenarios in consideration for future plans and projection. This scenario assumes that society will reach the 1.5 degrees Celcius of the Paris Agreement. However, they expressed that the scenario referenced in the 2021 SR and AR are not their strategy or business plan, especially since the 2050 goal is, in fact, outside their 10-year planning period. As mentioned in the previous section, Shell explicitly declared that these scenarios are only for the purposes of future oil and gas price outlooks, not financial projection nor operating plans.

Textually, the Chair's highlighted message in AR 2021 stated that "*For more than 100 years, Shell's people have provided much of what is needed for modern life: the energy to heat and light homes, the fuel for cars, trucks, ships and planes, the means to keep the world moving*". He also mentioned the scale of future challenges require them to be realistic yet optimistic regarding the energy transition. The Powering Progress plan is also declared by Shell as their "main plan" to reach their goal in become "carbon-neutral" by 2050, **not net-zero**. This can be argued related to their aforementioned intention of offsetting emissions. AR phrase this as their "purpose" whereas SR phrased it as their "strategy". Furthermore, unit of measurements section in the terms and abbreviations chapter of AR 2021 did not include any measurement in relation to energy, such as megawatts and gigawatts, despite being used in the report. Finally, the theme of finance and operations are barely addressed in this year's SR, with no explicit statement in the possibility of Shell not meeting their "carbon neutral" 2050 target.

In regards to the Powering progress plan figure presented in both 2021 reports shown in appendix 5, going with the reading the report from top to bottom and left to right, SR presented “respecting nature” and “powering lives” on equal levels in such sequence. The header in SR supported “respecting nature” coming first before “powering lives”. Whereas AR presented “powering lives” on the right-hand side and above “respecting nature. Later pages elaborating these values within the reports also supported this difference in sequence.

Prominent **sociocultural** events such as the Ukraine-Russian war were mentioned several times in the AR. The war was mentioned in the SR’s CEO message and immediate action concerning the war was reported. Furthermore, with regards to the Covid-19 pandemic, this sociocultural event had its own section under the Safety chapter, in alignment with the “end” of the pandemic itself (Government of the Netherlands, 2022). However, the Hague court ruling nor Milieudefensie climate case as a whole was mentioned in SR but is mentioned a few times in AR – with Shell expressing their disappointment and disagreement with the ruling and reasoning. Keeping in mind, this is the last year of the-then CEO, Ben van Beurden’s tenure.

5.3. Shell Sustainability and Annual Report 2022

The 2022 covers have **discursively** shifted from prominent colour brandings and individual vectors. They are replaced with movie-scene-like graphic images with the same title as SR 2021 and AR 2021, with an additional hashtag (#)PoweringProgress **textually** on the bottom left. As seen on figure 8, the images with renewables theme on SR showed wind turbine construction, a family dinner, a docking LNG tanker, a public bus on the road, nuclear plant, and electric cars being charged. Similar scenes can be seen in its AR counterpart but with the images connected to each other with the theme of air, land and sea. As you can see on figure 8, there is an image of an aeroplane flying on top of an image of a fuel recharge station offering electric, hydrogen, and petrol. The next images were the image of an oil rig connected to the image of a sailing LNG tanker on the sea. Followed by an image of a residential area with traversing people connected to an image of vehicles moving in their direction. The overall design and layout of the both 2022 reporting also differs from 2021 by being more “rigid” with predominantly grey colours and two columns in most of the report.

Figure 8. Covers of Shell's sustainability report and annual report 2022 (adapted from Shell Plc,2023a; Shell Plc, 2023b)

All phrases within the theme alluding to customer accountability are no longer present, as indicated in table 7. Instead, they are **textually** replaced with phrases of "supporting customers", "offering customers", "helping customers", and "bring benefits for wider society". Additionally, the topic of decarbonisation is observed to have its own section under the chapter of 'Marketing activities'. Furthermore, the "Powering Progress" figure is now consistent in both AR and SR, **textually** titling them as "our purpose" and having the same **discursive** sequence of "powering lives" above "respecting nature". Though the section sequence is still similar to its 2021 counterpart, as mentioned in chapter 5.1. Changes are also observed in the terms and abbreviations chapter, appendix 2. AR 2022 included energy measurements missing from the previous year's report. They also listed new abbreviations used repeatedly within the report itself, such as NCF for "net carbon footprint", NCI for "net carbon intensity", and RT for "real terms". In addition, only AR 2022's 'about this report' chapter revised the phrase "companies" with "entities" when defining Shell Plc.

Textually, the chair's message of 2022 highlighted *"a large, multinational organisation, like Shell, can combine the pursuit of value with contributing to a better world."* They also changed the phrase of "carbon neutral" to consistently becoming a "net-zero emission business" by 2050 while keeping the previously mentioned disclaimer and phrase definitions related to carbon offset. Additionally, they have also included nature-based solution (NBS) as part of their carbon credits. This is also the only year where 2060 was mentioned, as they discursively correlate the Paris target with the IPCC scenarios – while completely eliminating any mention of the 1.5 sky scenario mentioned in the 2021 reportings.

In terms of the table of contents themselves, there have been some notable **text-discursive-sociocultural** changes compared to their 2021 counterpart. As is evident from appendix 3, SR 2022 has two new chapters on Shell's response on the war in Ukraine and cost of living crisis. They have also sectioned off the section of 'environmental collaborations' to have its own chapter in SR 2022, as

previously it was under its previous chapter of 'Our approach to respecting nature' in SR 2021 – albeit the content did not differ much between the two years. They are also observed to switch the placement between chapter 'Producing oil and natural gas' and 'Embedding sustainability into projects', making the latter chapter go first.

Consequently, AR 2022 has a significant change within the 'Strategic Report' segment, as seen from appendix 4. 'Powering Progress' is now explicitly labelled as "strategy" with the progress of such strategy mentioned two chapters after. All reporting segment in 2022 onwards falls under the same 'Progress on strategy – year in review' chapter with along with new segmentation of their performance reporting. This segment update was first mention in AR 2021 and is now applicable, with notably Renewables and Energy Solutions having their own sub-chapter. The main chapters within the 'Strategic Report' segment are also renamed to match the elements of the Powering Progress Strategy, in accordance with their own theme, with company performance labelled as 'generating shareholder value'; 'Climate change and energy transition' labelled as 'Our journey to net zero'; 'Environment and society' as 'Respecting nature', and 'Our people' as 'Powering lives'. They also added a new dedicated sub-chapter for 'Safety'.

A major transition had occurred in Shell during this 2022 reporting period, which is the CEO succession from Ben van Beurden to Wael Sawan. Other **sociocultural events** are mentions of the Covid-19 pandemic and the Russian-Ukraine war in the AR and the opposite of 2021 in SR. In other words, the section of 'Response to Covid-19 Pandemic' is absent and 'Our response to the war in Ukraine' chapter is present, marking the anniversary of the war in Ukraine. Finally, the phrase of "Ruling from District Court in The Hague" has also been reduced significantly, leaving it only briefly mentioned in two different risk factors.

5.4. Shell Sustainability and Annual Report 2023

Real-life images had now **discursively** completely replaced graphics in the figure 9 2023 reporting's cover. Four real-life images with similar happy nuances are placed inside layered silhouette of the shell logo. Both SR and AR have similar images of smiling energy workers on the top-left side and a picture of a green field on the bottom-left side. The other two images are a wind-farm and people cooking in the kitchen in SR, along with two pictures of a tanker in the ocean and a person charging his electric car in AR. No titles are **textually** present, replaced with only the name of the SR and AR respectively. On the other hands, "#PoweringProgress" is present on the bottom-center with a new addition of Shell's official logo on the top-left corner. The overall design and layout are seen to be more formally structured than before. This can be seen from their use of images in separate boxes, most labelled with numbers and details from real life projects and examples. Most pictures, figures, and diagrams are put in a rounded-corner rectangular frames with the contents placed more symmetrically organised than before. Another **textual** difference compared to the previous years, the Chair's message now highlighted "*for Shell, 2023 was a pivotal year in our drive to achieve more value with less emissions*"- having no explicit mention of Shell's impact or contribution to the world.

Figure 9. Covers of Shell's sustainability report and annual report 2023 (adapted from Shell Plc, 2024b; Shell Plc, 2024c)

Within the theme from table 7, Shell's scope 3 emissions are now **textually** mentioned in sections other than statistical data, more specifically in the '*Achieving net-zero emissions*' section of the AR Powering Progress strategy chapter, along with Chair and CEO messages. It is addressed almost twice compared to 2021 and is explicitly stated together with scope 1 and 2 for the first time in SR. On the other hand, the 'terms and abbreviations' chapter has expanded over twice its predecessor's as seen in appendix 2. Most 'miscellaneous' terms added are corporate terms unique to this AR, such as EC for 'executive committee', or organisations and other publicly-known terms which have been stated in previous reportings but is not listed yet within this chapter, such as ISO for 'International Organisation for Standardisation' and LGBT+ for 'Lesbian, gay, bisexual and transgender'.

Most of the identified keywords in table 7 have their maximum number of mentions in both report type within this year. This includes renewables such as wind, solar, and biofuel; lower carbon keywords such as LNG, GTL and carbon credits; along with the highest mention within the theme of research and digitalisation – with a slightly lesser number of non-renewables in comparison. Also **text-discursively** noting of the same disclaimed and phrase definitions still persistently reiterated within the same sections as its previous years. This also applied to NBS as "carbon credits", LNG as "lower-carbon" and carbon neutral as "off-setting carbon emission".

Regarding SR 2023's table of contents in appendix 3, the segment of 'our core values' has been **textually** shortened to 'our values', segment 'generating shareholder value' to 'sustainability in our oil and gas activities', chapter 'protecting biodiversity' to 'biodiversity and ecosystems', and changing the word 'waste' in chapter 'circular economy and waste' to the word 'resource use'. Chapters **socioculturally** discussing Shell's response to the Ukraine war and on living crisis cost have also been removed. Furthermore, the 'just transition' section within chapter 'managing our impact on people' have its own chapter in this report. The content of the SR itself have been **discursively** added with a considerable amount of more statistical data, particularly within the theme of financial and operations.

Similar to the previous year, further creation of sub-chapters can also be **text-discursively** observed in AR 2023's table of contents, appendix 4. These changes particularly happened in under chapter 'Powering Progress Strategy' which created five different sub-chapters, four of which is from pre-exisiting sections and content. The one new sub-chapter called 'progress against our longer-term business targets' which specified Shell's progress specifically dedicated towards their 2050 net-zero emission target. More sub-chapters are also expanded in sub-chapter 'Corporate' and 'Powering lives', emphasising pre-existing sections of 'other central activities' as well as 'contribution to society' and 'our people' respectively. Naming simplification can also be **textually** identified in the renaming of two chapters, with 'progress on strategy – year in review' in SR 2022 to 'performance in the year' in SR 2023, as well as 'five-year financial dataset' to 'financial calendar' respectively. Furthermore, the 'about this report' chapter in placed at the very end of the report, unlike at the beginning as with its predecessors.

Socioculturally, this report is the first full-term report for the new succeeding CEO, Wael Sawan. In regards to the Milieudefensie climate case, the phrase of "Ruling from District Court in The Hague" is at the minimum in AR 2023, with only one mention in 'Climate-related societal risk (including litigation risk)' risk factor. Shell did express their intention for appeal on this ruling, with the assurance that the results will not change their 2050 target. Mentions of the Russian-Ukraine war have also been reduced along with Covid-19 pandemic mentioned only twice, in comparison to the previous AR.

All in all, similarities and differences can be observed in multiple levels across the 3-year reporting. Before moving to the discussion, table 1 provided a text-discursive summary of the comprehensive keywords of table 7 in appendix repeatedly mentioned throughout this chapter. These summaries are aligned based on their relevance for each specific year accordingly.

Table 1. Summary of themes identified within Shell's Sustainability and Annual report of 2021, 2022, and 2023

<table>
<tr><th>Themes</th><th>Details</th><th>SR 21</th><th>SR 22</th><th>SR 23</th><th>AR 21</th><th>AR 22</th><th>AR 23</th></tr>
<tr><td>Emphasising of core values</td><td>Reiteration of Shell's core values in honesty, integrity, respect for people, and focus on safety, which encompassed their Powering Progress strategy</td><td colspan="3">Mentioned only half than AR</td><td>Mentioned the most</td><td></td><td></td></tr>
<tr><td>Net-zero emission</td><td>Addressing of Shell's commitment in becoming a net-zero emissions energy business, along with their emission classification.</td><td colspan="2">Prominent mentions of scope 1 and 2, with lack of mentions in scope 3</td><td>Increasing mentions of scope 3</td><td colspan="2">Scope 1 and 2 are addressed more than scope 3</td><td rowspan="2">Scope 3 emission highlighted in Chair and CEO message an mentioned in other sections</td></tr>
<tr><td>Targets</td><td>Shell's target year(s) in achieving their goals</td><td></td><td>2040 / 2060 target only mentioned to reiterate Shell's alignment with IPCC</td><td>Increased mentions of 2025 (first target) and 2030 (first milestone)</td><td colspan="2">2040 / 2060 target only mentioned to reiterate Shell's alignment with IPCC</td><td>Major increasing mentions of 2025 (current end period) and 2030 (first milestone)</td></tr>
<tr><td>Collaboration, efforts and engagement</td><td>Mentions of collaboration with employees, stakeholder, suppliers, communities, and other parties to achieve their goal</td><td colspan="3">No mention of global collaboration</td><td colspan="3">High frequency of the phrase "engage(ment)"</td></tr>
</table>

Renewable energy	Highlights of aspects renewables and renewable energies			Double the mention of "renewable" and renewable energy"		Considerable increase of renewables and its specific' types being mentioned	
Research and digitalisation	Mentions in efforts to drive sustainability and accelerate energy and mobility transformation	Recurrence increased steadily					
Circular economy	Efforts in reduction of waste towards a more sustainable process	Keywords are mentioned more in SR					
Credible standardisation	Adherance or alignment to (international) credible standardisation	More mention of "industry standard" than AR			No mention of "UN Universal Declaration of Human Rights" or "International Labour Organization"		
Customer and society	Highlights in the role customer or society play in Shell's energy transition	Emphasis on society's role and their accountability		No phrases mentioned	Emphasis on society's role and their accountability		No phrases mentioned
Environment, carbon emission, and sustainability	Mentions in regards to environmental responsibility and issues	"Environmental impact" only mentioend once			Terms of "environment", "carbon emission" and "climate change" are 3 - 10x more than SR		
Energy transition and low(er) carbon	Efforts in reducing or compensating emissions, without eliminating it.				No mention of "CO2 COMPENSATED"		
Non-renewable operations	Mentions of Shell's non-renewable business stream	Little mention of fossil fuel, but other indicidual streams are mentioned more than the renewables					
Covid-19 Pandemic	Highlights on the Covid-19 pandemic	Addressed more specifically		No mention	Addressed more specifically		Only mentioned as a risk

Russian-Ukraine war	Features on the Russian-Ukraine war		Addressed more specifically	No mention		Addressed more specifically	
Milieudefensie climate case	Mentions of the ongoing Milieudefensie climate case from the District Court in the Hague	No mention			Briefly addressed	Only mentioned as a risk	Only mentioned as a risk
Anthropocentric efforts	Addressing of social responsibility, diversity and humanitarian efforts	Although SR has less pages, the frequency of words is similar with AR					
Welfare	Highlights on welfare of Shell's stakeholders, particularly their employees	More emphasis on safety					
Corporate responsibility	Words related to ethical business and accountable practices	Similar frequency on all keywords			More emphasis on corporate integrity and less on 'trust' efforts		
Financial and operations	Terms related to Shell's financial health, financial performance, and stakeholder returns	Only mentioned in 'Cautionary Note' or financial-related diagrams			Used considerably more and well distributed throughout the report		
Uncertainty and risks	Phrases related to disclaimers concerning unprecedented events	Less explicit	Mostly mentioned in 'Cautionary Note'		Less explicit	More disclaimer where needed	
Forward-looking statements	Terms indicating future expectations and plans, as disclaimed in Shell's reportings	Overall consistent and well-distributed throughout all reports					

5.5. Statistical performance and notable efforts

Due to the nature these reportings containing technical financial terms and other statistic that require more in-depth knowledge of accounting, the energy market, forecasting, accounting, and many more, the result will focus on the highlighted performance statistical report showcased in both SR, AR, and either one. These highlighted performance data are ones that Shell encapsulate in design and placed close to a header section of a segment or a chapter relevant to the sustainability overall theme.

As shown in appendix 7, there are some statistics are missing from certain years. This is with the exception of year 2020 data since 2020 reporting period is not included in this study and the existing data is references obtained from both 2021 reportings where available. There are also a couple numbers marked in red within the table. This is due to a difference in the next year's reporting with no explanation or acknowledgement even though the numbers are referring to the same data and year. Some performance data types are replaced or removed from the highlights of the same section as its previous year. Vice versa, some data types which were not mentioned in the previous year report, are added as a new type.

The table itself also indicated that there are positive sustainable efforts increasingly done by Shell since 2021 reporting period, occasionally from even longer where indicated. More employees are hired with more trainings given and more women leading. Earnings and cashflow are finally on the positive margin in 2023 reportings, along with increase of external power sales and renewable capacity. The number of electric vehicles (EV) charge points have more than doubled since 2021 reporting, as well as steady increase in research and development expenses.

On the non-renewables, there is a slight steady decrease in refining and chemicals availability, oil and gas production for sale, and LNG liquefaction volumes. The oil and gas production decrease are said to be due to divestments across all 3 reporting years, in addition to new fields ramp-ups in 2022 and growth from new fields in 2023. At the same time, there is also an increase in total proved developed and underdeveloped oil and gas reserves, which Shell stated includes confirmed reserves that will be used in future production operations. Every decrease in non-renewables are most of the time accompanied with similar type of reasonings. 2023 reporting in particular encountered quite some accidents and oil spills in comparison to the last years. Consequently, there is an overall decrease of all 3 scoped of GHG emissions compared to 2016, along with a slight decrease in Methane emissions, flaring, freshwater consumed, energy used, and selling of lower-carbon products or LNG. They are also halfway to meeting their 2030 goal in cutting their scope 1 and 2 emissions in half and more so in achieving a near-zero methane emissions. Their closest target is in 2025 to eliminate routine flaring from upstream operations is only 0.1 away as of the 2023 reporting.

Heading to the next subject matter of notable efforts, this study recognised that Shell listed many efforts and initiatives within this three-reporting period within the overall theme of sustainability and more. Thus, the ones written in this section are the more 'standouts' within the CDA scope of this research.

The 2021 reporting was presented by new commitments by Shell on biodiversity, water conservation, circular economy, and waste reduction. They also mentioned their plans in building one of **Europe's largest biofuels facilities** in Rotterdam, increasing their EV charge points to more than **500 thousand** by **2025**, and put more investments in renewable projects such as the Timi gas development in Malaysia.

The same biofuel facility in Rotterdam has been fully invested by Shell in 2022 reporting. Within the same report, Shell announced their acquisition of Europe's **largest producer** of **renewable natural gas** and a solar and wind group in India called Sprng Energy. Development-wise, they also focused on chemical recycling to break hard-to-recycle plastics into raw materials. Consequently, more than 30% of their service stations have eliminated **unnecessary** single-use plastic. Same as in 2021, 2022 reportings also showed Shell's contribution in helping employees still in impact from the Covid-19 pandemic, along with addition humanitarian aid to people in Ukraine and their employees affected by the war.

2023 reporting had the EV charge points target mentioned in 2021's **revised** from 500 thousand **to 200 thousand** by 2025 – despite their success in opening the **largest electric vehicle charging station** in China. This period marks their achievement in Australia as well, due to their **highest record** of **LNG** production. They are also building a BioLNG plant in Germany after their success in AR 2022, when they become the **first fuel provider** to offer blended LNG products in the Netherlands. 49% of their research and development budget had gone to decarbonisation project while continuing efforts in **developing circular economy** for plastics. Furthermore, Shell has implemented ecological projects for contribution to the preservation of natural habitats. They also invested in community development programs in regions where they have significant present and pledged $200 million to improve energy access in sub-Saharan Africa, India, and Southeast Asia.

6. Discussions

This chapter will discuss the results elaborated in the previous section to unveil the discourse in addressing sustainability challenges through identification of their primary intended audience for both reports, discussing certain disclaimers and definitions, unpacking their "main plan", and overall evolution in their 3-year selected reports. This also include how the discourse compares to the reported highlighted performance, and how did CDA de-construct such discourse towards sustainability.

"How does Shell discursively construct its role and responsibility in addressing sustainability challenges?"

Every year, Shell seems to keep **similar corporate format** for presenting their contents but slightly differs from the contents itself. **Discursively**, they appear to differentiate the expected target audience for their SR and AR. The **SR** seems to be directed at a more **general audience**, those who are perhaps not as technically versed at reading corporate reports as those in the field. While the **AR** give the impression of catering to their main **shareholders**, **investors** and other **legal bodies** such as the SEC. The AR is also discursively expected to be more readily available **offline**, as noted in their use of FSC logo. In terms of legitimacy, they continuously, without fail, incorporating and is in **alignment international credible standardisation**. This is more prominently seen in their target setting leaning to the Paris agreement and reflection of the IPCC scenario.

Shell does select the words, terms, and phrases they **use with a purpose**. They also organise these reports in such a way that it fits the purpose of the report itself. The perfect example of this can be seen in most of their disclaimers and some definitions. The first sample is seen in their statement of "*past performance cannot be relied on as a guide to future performance",* which seemingly **disprove**

the concept of **forecasting** or any predictive research based on data within these reports in general. The second is terms and phrases defined under such "forward-looking statements" are arguably common English words to communicate commitments, wishes, and intentions in general. Any difference between results and pre-existing target seems to, once again, **forgo accountability** without specific clarity or further information in the event that such targets are not met – fulfilling similar purpose as the first sample. One can argue the validity of the entire report could be deemed invalid seeing the tremendous amounts of sentences under this forward-looking category are present throughout each page. It is true that no one can absolutely predict the future, but that should not make accountability irrelevant based on previously published explicitly stated statements.

Another interesting observation is of their disclaimer on their strict 10-year planning period, yet multiple graphs and sentences mention years 2040 and 2050, as seen in table 7. They also mentioned relying on society's net-zero progress to impact theirs but **no empirical evidence** other than their own opinion was stated in all reports. This suggests assumptions based on their angle with little basis and overall accountability to their stated plans or targets – albeit, a forward-looking statement.

The **exclusion** of the definition of "Carbon neutral" or "CO2 compensated" keywords **in AR**, which involved Shell's explicitly stated efforts to **using carbon offset** to claim that their "**carbon neutral**" products are, in fact, neutral, is rather questionable. Any products or statements using these similar words may be put into **question** in regards to their **sustainable validity, true emissions, and actual environmental impact**. Seeing the legal purposes of AR and the difference on their page numbers with SR, one would argue that AR are expected to be more comprehensive and contain more overall information. Furthermore, their intention to always **compensate** for **remainder carbon emissions** textual-discursively suggests that they will **never achieve true circularity** and will always **pollute**. Their specific use in the phrase "*reducing the use of fossil fuels"* within the disclaimer textually indicate their continuous intentions in **not eliminating** and still utilising **fossil-fuel** for the foreseeable future – the next 10 years at minimum. This is also in line with their continued defensive-type reasoning when non-renewable results are decreasing. One of the reasoning mentioned in the previous notable efforts sections explicitly stated that **oil reserves will be used for future** production operations. This further supporting such claims and confirming that the result of the study by Li et al. (2022) still relevant per the 2023 published reporting.

As previously mentioned in the literature review, Li et al. (2022) also observed and increase in discourse related to climate and clean energy. This remains to also be true, as showcased in both the result and appendix 6. Table 6 provide a more evident comparison, exhibiting the **number 1 keyword**s mentioned overall, exclusively in SR and AR are still under the **climate and clean energy nuances**: "environment", "sustainability", and "energy transition" respectively. Additionally, the **incoherence** towards non-renewable observed by Li et al. (2022) remained relevant within the keywords with **non-renewables** ranking relatively high in table 6 compared to climate and specific renewable related keywords.

Still on the topic of non-renewables, the corelation of renewables and low(er) carbon ventures such as LNG present in the study by Si et al. (2023) appear to still be true. Shell seems to brand **LNG** as their **lower-carbon** products and emphasised LNG's critical role in the energy transition and sustainability efforts. Within this study, new findings of environmentally friendly initiative such as NBS are now found to be treated under the category of carbon credits – which ideally should not be the case. Appendix 6 further exhibit the concerningly much number of LNG mentioned in SR compared to "renewable" and other renewable specific types. The entire theme in table 7 of 'energy transition and low(er) carbon' showed that Shell has discursively placed a **blurred line** between what is **sustainable or**

environmentally friendly and what is not. This can be considered concerning when reflecting on the overall influence and impact Shell has to society and the world.

The company's significantly **global impact** is confirmed by Shell's own chair in their 2021 and 2022 highlighted message. One may argue that there was a sociocultural change in leadership in between the two years, but the Chair still remained the same. He reiterated in 2021 on Shell's **more than a century** long contribution to the people's and the world's need to "*keep it moving*". The major influence still highlighted the next year, stating that Shell is "a *large, multinational organisation"* that *"contribute(ing) to a better world".* Textual-discursively indicating that Shell's own chair is aware on how much Shell is **influencing the world** as a whole, and indirectly, its emissions. Yet, they continue to exclude the emissions produced by their own customers' use of their product (scope 3). Although notably, this is more evident in the 2021 and 2022 reportings.

Another prominent textual-discursive element is observed in their core values, especially the Powering Progress strategy. Shell's core values of Powering Progress strategy encompassed the definition of sustainability defined in this study. The element of '*achieving net-zero emissions'* and '*respecting nature*' adhere to the values of ecocentrism, while '*powering lives'* supports people and generations in line with anthropocentrism. The last element of '*generating shareholder values*' finds the balance and packaged them the corporate context of the company's accountability to its shareholder. On the other hand, the inconsistency in the diagram and sequence placement created questions on to their priorities among these elements. The first version in figure 3 placed an ecocentric element with the anthopocentric one within the **same standing**, indicating balance between the two. Whereas the second version in figure 4 put '**humans'** before '**nature'**, which negates the balance critical to the concept of sustainability and placing priority on profit.

The difference in content sequence also further reinforced that the different placement of the elements does serve a purpose. This can be seen in the segment header of SR prioritising '*achieving net-zero emissions'* and '*respecting nature'* due to the nature of sustainability and highlighting such efforts in SR. Whereas AR placed '*generating shareholder values'* in the forefront to serve the main target of the AR, their stakeholders. Albeit, changing the title of chapter '*generating shareholder value'* to '*sustainability in our oil and gas activities'* in SR 2023 is more fitting due to the content of sustainability that SR is purposed for. Additionally, '*achieving net-zero emissions'* is placed right after it, arguably, due to the **recognition** in the **importance of the energy transition** and fulfilment of **calls** from **international organisations** mentioned in section 1 along with society.

Visual-wise, all reports discursively stipulate a move towards a more formal, realistic, and structured design style across the three different years. Where **2021** leave the icons some room for the readers' **own interpretation**, **2022** portrayed the **scene** for the reader and **2023** placed it in "**reality**" by producing real-life images. One may argue that this indicates Shell's transition to making their efforts a reality and no longer up to interpretation. This is interestingly supported by the previously mentioned Chair's highlighted message of 2023, where he no longer highlights Shell's influence but is more focused on what Shell is doing: "*achieve more value with less emissions*".

They also stopped textually titling the reports with "responsible energy" for SR and "powering progress" for AR in 2023. Reflecting back, textually this may elude that SR contains efforts on Shell being responsible for their energy while AR contains the elaboration of their plan to become net-zero by 2050. The sudden reconditioning of 2023's titles, content, highlights and other results mentioned previously is in alignment with the **sociocultural** impact of the new **succeeding CEO first full term** and the **Milieudefensie climate case appeal** occuring just a month after the publishing of the 2023 reports. The new 2023 overall style, format, and content seems to be more transparent and explict compared

to its previous years. Leaving less room for interpretation and more textual-discursively sustainable content for their readers to view.

Design and visualisation wise, it is more structured and rigid with a better clarified segmentation of the reporting itself – as seen in the new sub-chapters in appendix 4 and appearance of Shell's statistical progress towards their longer-term goal in 2050. One could argue that this gave the reader **more clarity** and a more **well-packaged information**, **without hiding** behind lines of repeated words and numbers. 2023 reporting also brought new reporting methods and arguably, a more complete highlighted performance data set. The Milieudefensie climate case appeal was only a month after the publishing of both set of 2023 reporting, in which I believe this report will be taken into account more than its predecessors. The attitude of **helping society** is now in force by Shell encouraging their customers to change to renewables in the form of product offerings. This seems to be perceived well by the public with Renewables and Energy solutions having $ 3 billion in earnings, compared to its previous years of being in the negative – which can be further observed in appendix 7. The use of hashtags in the 2022 and 2023 covers could also indicate a presence of increased social media activities, though it is also not within the scope of this study.

The **contrast** of their reporting between **2021** and **2023** are quite apparent. First, they textually placed pressure, reliance, and **accountability on society** in **2021**, while reiterating their influence to the world and their role in supporting society's demands and needs. Arguably attributing to the uncertainty of the sociocultural events leading up to its publishing. In particular, the timeline of the 2021 publishing is only less than two months after the Covid-19 pandemic subsiding and starting of the Ukraine war (Government of the Netherlands, 2022; Government of the Netherlands, n.d.). Then, they **recinded these societal pressures**, discursively make things more comprehensive, and arguably clearer in **2022**. Finally, textually reiterating their **role and support of the energy transition** and their role in encouraging society to cleaner energy in **2023**, while discursively formalising the reports and Shell's position as a prominent business in society. A **business, not a public figure**, consistently keeping their disclaimers and definitions consistent throughout.

"How does the tangible reported sustainability performance taken by Shell compare to their stated claims?"

In regards to their performance, inconsistencies are present as it seems to be **tailored** and very **selective** depending on how sustainably will the statistic portray them as. It is worth noting that the 2023 reportings is less so compared to its predecessors. There have been instances in appendix 7 where the statistic in 2023 did not put Shell in a positive light sustainably, but the data was not replaced. Regardless, the overall efforts they put are real and significant.

Inconsistencies in data reporting across the 3 years have been observed as well. There is an instance where they strive to achieve an ambitious goal of making 500 thousand EV charge points in China by 2025 within their 2021 reports then revising it to 200 thousand in the 2023 reporting. They did **not address** this revision nor acknowledged it in the 2023 reports. The same happened to some statistical data mentioned previously in the result section and can be further seen in appendix 7. Two of these datasets include disclaimers indicating the use of a new reporting methodology; however, the others neither acknowledged this change nor provided any disclaimers. This eluded **absence of accountability** or credible data and, to some extent, **commitments**.

Shell clearly indicates that they textually **want to make an impact**, such is shown **textually** in their efforts of building the "**largest**" of renewable projects in two different countries, being the "**first**" fuel provider to offer blended LNG products in the Netherlands in 2022 reporting, and the **highest** record of LNG production in Australia in 2023 reporting. But once again, such impacts are **not** entirely

sustainable and **consistent** with the previously mentioned efforts of branding LNG as "more-sustainable" and their continued **reliance** on n**on-renewables**. Additionally, efforts towards circular economy were one of their main highlights, with efforts of eliminating unnecessary single-use plastic at a third of their service stations. However, this issue was not addressed in much length, particularly in AR. In fact, this same circular economy theme was overall addressed more in SR than AR – **contradicting** the significance in terms of **efforts** textually indicated by Shell in their reporting. More statistical data are present and further elaborated in all reports, along with their disclaimers and references. However, the scope and technicality of the data are seemingly irrelevant for this study considering the overall theme, methodology, timeline and expertise of the researcher.

"How does CDA de-construct Shell's discourse towards sustainability, and how does this relate to their reported (in)action-of-change?"

In this particular study, **CDA** as a methodology is able to connect the essence of **sequence**, **patterns**, and **messages** from different sections and perhaps, identify the **motive** behind the drafting of the report itself. Perhaps the individual preferences of Shell's designated team – such as copywriter, design, internal branding team, among others – may have an impact on how each year's reports are constructed to a certain extent. Albeit, the impact may not be as prominent as industry critical events or global phenomenon as Shell is a multinational established corporate company. Keeping in mind that although the sociocultural events mentioned in this study **does not cover regional nor internal conflict**, the ones mentioned are prominent enough to be able to explain the changes between one reporting year to the other. A new chapter, section, or theme within the reports is observed to follow major events within both timely and fast manner – relative to the publishing date. The evolution of the reports across the 3-years could also be attributed to the change of CEO, the Milieudefensie climate case appeal, or even both. Albeit, Shell's declaration that the result of the climate change appeal will not change their 2050 target is yet to be determined and not within the scope of this study. All in all, CDA did what it set out to do but it is a lengthy and detailed process that needed more time and expertise – particularly when facing a data from such prominent and established FFEC as Shell.

7. Conclusion

FFEC, such as Shell, is a "giant" to analyse and challengingly distracting, at first. By analysing the sustainability and annual report 2021, 2022, and 2023 of Shell, CDA elucidated incoherence between sustainability claims and tangible actions – within the broader socio-political context of the Covid-19 pandemic, Russia-Ukraine war, their CEO succession and the Milieudefensie climate case. This approach revealed a considerable degree of incoherence, signs of greenwashing, but with progress in arguably the right direction. Shell explicitly acknowledged the importance of their role in the energy transition along with their prominent influence and contribution to the world and society at large. Within the same global scale, Shell continuously aligned and referred to international standards, reports, and applied it to their own corporate practices. As the year progressed, they have shown more transparency and clarity in critical statements of sustainability. They also show signs of moving away from using design and language to obscure unfavourable outcomes, instead presenting information more straightforwardly – indicating a new attitude from Shell compared to results by Si et al. (2023) and Li et al. (2022).

Albeit, they have yet to concentrate majority of their resources to true renewables or circularity, as well as continuing their reliance on fossil fuel and carbon offset. Their initial attitude of 'following society to net-zero' has evolved to 'facilitating society towards net-zero' through clear efforts in renewable projects and product offerings. Whether these renewable efforts can ever achieve 100% carbon neutrality without relying on carbon offsetting remains unresolved. It could be argued that Shell's approach to this discourse is intended to preserve a positive public image.

This study clearly illustrates the complexity and dichotomy of corporate sustainability in the FFEC industry through CDA. Textually, they had conveyed their claims, disclaimers, definitions, intentions, actions, efforts, and performances within their reports. These are all publicly accessible online and some offline. Discursively, some of these elements are more prominent, such as those placed on the cover or highlighted with eye-catching design. In contrast, others are more subtle and implicit, appearing in definitions, not listed in the table of contents or embedded as references. Their placement is also catered discursively, depending on 'which' information they would like 'who' to see. Socioculturally, they included major prominent events, adapted to it accordingly, and accommodating its relevance continuously if needed. More time, internal knowledge and expertise in the field could potentially uncover or provide more insights within the same topic and data set.

Considering the evolution with which Shell highlights sustainable themes, claims and longer-term targets in their reports, it is evident that the company has made progress in the right sustainable 'wave' direction. However, their disclaimer provided them with less accountability and their performance remains more rhetorical than demonstrably tangible.

8. Recommendations

Keeping in mind that this research will be concluded before the Milieudefensie climate case appeal announcement, future research is needed to assess the next year's report and so forth based on the result of the appeal. Expanding the dataset of FFECs is also possible, along with comparing FFEC from different countries or regional locations – even transcending to other platforms or media. Within the theme of CDA, comparing the discursive pattern and result of an established FFEC in transition against an organically sustainable company may provide new findings that may serve as a reference for similar company reporting in this energy transition. Another methodological approach in conducting interviews or using a qualitative method with similar research questions may also be interesting.

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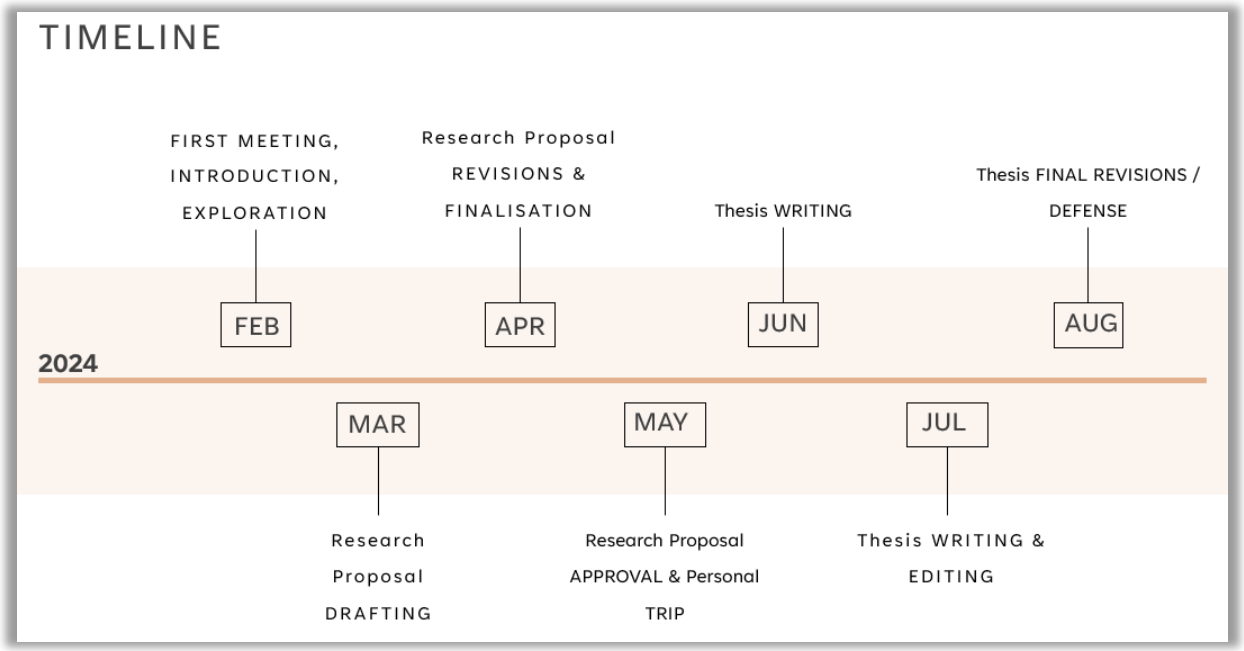
Appendix 1 – Timeline

The timeline for this research in Figure 10 showed that this research took six months to complete. The deliverables include the final research proposal submitted and approved on May, stalled by unexpected personal circumstances, refining it further to a thesis format within the next month, submitting the first draft by mid-June 2024, and submission of the final version on August 2024.

Figure 10. Research timeline



Appendix 2 – Annual Reports' Terms and abbreviation

The following table 2 presents a comparison of the 'Terms and abbreviation' chapter listed in Shell's AR for reporting period 2021, 2022, and 2023. The SR does not contain this chapter. Each term and abbreviation are placed within the same row as their predecessors to indicate consistency and discrepancy. If a cell contains a term and has another empty cell within the same row, then that particular term is missing from the respective year column. For example, the term 'barrel' or abbreviation 'bbl' only appeared under column AR 2023 and nowhere else. This indicates that this term and abbreviation is only listed in AR 2023 and is absent in AR 2021 nor AR 2022.

Table 2. Terms and abbreviations from Shell's Annual report 2021, 2022, and 2023 (adapted from Shell Plc, 2022a; Shell Plc, 2023b; Shell Plc, 2024c)

AR 2021		AR 2022		AR 2023	
Currencies		**Currencies**		**Currencies**	
$	US dollar	$	US dollar	$	US dollar
€	euro	€	euro	€	euro
£	sterling	£	sterling	£	sterling
Units of measurement		**Units of measurement**		**Units of measurement**	
acre	approximately 0.004 square kilometres	acre	approximately 0.004 square kilometres	acre	approximately 0.004 square kilometres
b(/d)	barrels (per day)	b(/d)	barrels (per day)	b(/d)	barrels (per day)
				bbl	barrel
boe(/d)	barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel	boe(/d)	barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel	boe(/d)	barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel
				GJ	gigajoule
		GW	gigawatt	GW	gigawatt
kboe(/d)	thousand barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel	kboe(/d)	thousand barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel	kboe(/d)	thousand barrels of oil equivalent (per day); natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel

		kWh	kilowatt-hours	kWh	kilowatt-hours
		mb/d	million barrels per day	mb/d	million barrels per day
megajoule	a unit of energy equal to one million joules	megajoule	a unit of energy equal to one million joules	megajoule	a unit of energy equal to one million joules
MMBtu	million British thermal units	MMBtu	million British thermal units	MMBtu	million British thermal units
mtpa	million tonnes per annum	mtpa	million tonnes per annum	mtpa	million tonnes per annum
		MW	megawatt	MW	megawatt
		MWh	megawatt hours	MWh	megawatt hours
				Nm3	normal cubic metre
per	day volumes are converted into a daily basis using a calendar year	per	day volumes are converted into a daily basis using a calendar year	per	day volumes are converted into a daily basis using a calendar year
scf(/d)	standard cubic feet (per day)	scf(/d)	standard cubic feet (per day)	scf(/d)	standard cubic feet (per day)
		TWh	terawatt hours	TWh	terawatt hours
Products		**Products**		**Products**	
GTL	gas-to-liquids	GTL	gas-to-liquids	GTL	gas-to-liquids
LNG	liquefied natural gas	LNG	liquefied natural gas	LNG	liquefied natural gas
LPG	liquefied petroleum gas	LPG	liquefied petroleum gas	LPG	liquefied petroleum gas
NGL	natural gas liquids	NGL	natural gas liquids	NGL	natural gas liquids
Miscellaneous		**Miscellaneous**		**Miscellaneous**	
				Act	UK Companies Act 2006
ADS	American Depositary Share	ADS	American Depositary Share	ADS	American Depositary Share
AGM	Annual General Meeting	AGM	Annual General Meeting	AGM	Annual General Meeting
API	American Petroleum Institute	API	American Petroleum Institute	API	American Petroleum Institute
				APM	Alternative performance measure
				ARC	Audit and Risk Committee
CCS	carbon capture and storage	CCS	carbon capture and storage	CCS	carbon capture and storage
CCS earnings	earnings on a current cost of supplies basis	CCS earnings	earnings on a current cost of supplies basis	CCS earnings	earnings on a current cost of supplies basis

				CFFO	cash flow from operating activities
				CISO	Chief Information Security Officer
				CMD	Capital Markets Day
		CMF	carbon management framework	CMF	carbon management framework
CO_2	carbon dioxide	CO2	carbon dioxide	CO2	carbon dioxide
				CO2e	carbon dioxide equivalent
				COP28	28th meeting of the Conference of the Parties to the United Nations Climate Change Conferences
				CRC	Carbon Reporting Committee
				CRT	Commercial Road Transport
				CSRD	Corporate Sustainability Reporting Directive
				DE&I	Diversity, equity, and inclusion
				EC	Executive Committee
EMTN	Euro medium-term note	EMTN	Euro medium-term note	EMTN	Euro medium-term note
EPS	earnings per share	EPS	earnings per share	EPS	earnings per share
				EPSA	exploration and production sharing agreement
				EPTB	Environmental Products Trading Business
				ETS24	Energy Transition Strategy 2024
				EV	Electric vehicle
FCF	free cash flow	FCF	free cash flow	FCF	free cash flow
FID	final investment decision	FID	final investment decision	FID	final investment decision
GAAP	generally accepted accounting principles	GAAP	generally accepted accounting principles	GAAP	generally accepted accounting principles
GHG	greenhouse gas	GHG	greenhouse gas	GHG	greenhouse gas

HSSE	health, safety, security and environment	HSSE	health, safety, security and environment	HSSE	health, safety, security and environment
IAS	International Accounting Standards	IAS	International Accounting Standards	IAS	International Accounting Standards
IEA	International Energy Agency	IEA	International Energy Agency	IEA	International Energy Agency
IFRS	International Financial Reporting Standard(s)	IFRS	International Financial Reporting Standard(s)	IFRS	International Financial Reporting Standard(s)
				IOGP	International Association of Oil & Gas Producers
				IPCC	Intergovernmental Panel on Climate Change
IOGP	International Association of Oil & Gas Producers	IPIECA	International Petroleum Industry Environmental Conservation Association	IPIECA	International Petroleum Industry Environmental Conservation Association
IPIECA	International Petroleum Industry Environmental Conservation Association	IOGP	International Association of Oil & Gas Producers	IRM	Information Risk Management
				ISO	International Organisation for Standardisation
				KPI	Key performance indicator
				LGBT+	Lesbian, gay, bisexual and transgender
LTIP	Long-term Incentive Plan	LTIP	Long-term Incentive Plan	LTIP	Long-term Incentive Plan
				NBS	Nature-Based Solutions
		NCF	Net Carbon Footprint	NCF	Net Carbon Footprint
		NCI	net carbon intensity	NCI	net carbon intensity
				NGO	Non-governmental organisation
				NOMCO	Nomination and Succession Committee
				NZE	Net zero emissions

OECD	Organisation for Economic Co-operation and Development	OECD	Organisation for Economic Co-operation and Development	OECD	Organisation for Economic Co-operation and Development
				OFCF	organic free cash flow
				OGCI	Oil and gas climate initiative
OML	oil mining lease	OML	oil mining lease	OML	oil mining lease
OPEC	Organization of the Petroleum Exporting Countries	OPEC	Organization of the Petroleum Exporting Countries	OPEC	Organization of the Petroleum Exporting Countries
				OPEC+	12 members of the OPEC and 11 other non-OPEC members
OPL	oil prospecting licence	OPL	oil prospecting licence	OPL	oil prospecting licence
PSC	production-sharing contract	PSC	production-sharing contract	PSC	production-sharing contract
PSP	Performance Share Plan	PSP	Performance Share Plan	PSP	Performance Share Plan
				QRA	Quarterly Results Announcement
				R&D	Research and development
REMCO	Remuneration Committee	REMCO	Remuneration Committee	REMCO	Remuneration Committee
				RNG	Renewable natural gas
		RT	real terms	RT	real terms
				SEAM	Safety, Environment and Asset Management
SEC	US Securities and Exchange Commission	SEC	US Securities and Exchange Commission	SEC	US Securities and Exchange Commission
				SGBP	Shell General Business Principles
				SIAI	Shell Internal Audit and Investigations
				SP	social performance
				SUSCO	Sustainability Committee
TRCF	total recordable case frequency	TCFD	Task Force on Climate-related Financial Disclosures	TCFD	Task Force on Climate-related Financial Disclosures
		TRCF	total recordable case frequency	TRCF	total recordable case frequency
TSR	total shareholder return	TSR	total shareholder return	TSR	total shareholder return
				WACC	weighted average cost of capital

WTI	West Texas Intermediate	WTI	West Texas Intermediate	WTI	West Texas Intermediate

Appendix 3 – Sustainability Reports' Table of Contents comparison

The following table 3 presents the 'Table of Contents' segment of Shell's original SR 2021, 2022, and 2023 placed side by side to each other. The table itself is separated by two parts, the legend and the main table. Excluding the header year in shades of orange, all bold entries are defined as segments per the segmentation from the original SR. Any entries directly beneath these segments are defined as chapters. Furthermore, each segment and chapter are placed within the same row as their predecessors to indicate consistency and discrepancy. The comparison will be conducted against direct predecessors of each report, or in other words, SR 2022 to SR 2021 and SR 2023 to SR 2022. The observation will be indicated in accordance with the colour-coding defined in the legend. The legend itself contains five different categories defined as follows:

- Same content, separated: Any content that was placed together under the same chapter/segment in their last year but is then highlighted and designated its own chapter/segment in the next year. The two relevant combined chapter/segment in the first year and the separated chapter/segment in the second year will be grouped by a coloured thick line to indicate their association.
- Rename: Any name of segment/chapter that is modified in comparison to its previous year.
- Placement moved: Any segment/chapter who's sequence or placement has changed in comparison to its previous year. The two relevant chapter/segment in the second year will be grouped by coloured thick line to indicate their association.
- New compared to previous year: Any content that did not have its own dedicated section/chapter/segment in the previous year.
- Removed: Any segment/chapter that exist in last year's report but is no longer present.

Table 3. Table of contents from Shell's Sustainability report 2021, 2022, 2023 (adapted from Shell Plc, 2022b; Shell Plc, 2023a; Shell Plc, 2024b)

Legend:		
Same content, separated	Rename	Placement moved
New compared to previous year	Removed	
SR 2021	**SR 2022**	**SR 2023**
01 SUSTAINABILITY AT SHELL	**Sustainability at Shell**	**Sustainability at Shell**
02 Letter from the CEO	02 Letter from the CEO	02 Letter from the CEO
04 Powering Progress	04 Powering Progress	04 Powering Progress
05 Our approach to sustainability	05 Our approach to sustainability	05 Our approach to sustainability

08 About this report	09 About this report	08 About this report
10 OUR CORE VALUES	**Our core values**	**Our values**
11 Business ethics and transparency	12 Business ethics and transparency	11 Business ethics and transparency
	14 Our response to the war in Ukraine	
14 Safety	15 Safety	14 Safety
20 ACHIEVING NET-ZERO EMISSIONS	**Achieving net-zero emissions**	**Achieving net-zero emissions**
21 Energy transition	22 Energy transition	22 Energy transition
24 Managing greenhouse gas emissions	25 Managing greenhouse gas emissions	27 Managing greenhouse gas emissions
32 Providing lower-carbon electricity	32 Providing lower-carbon electricity	34 Providing lower-carbon electricity
36 Fuelling mobility	34 Fuelling mobility	37 Fuelling mobility
39 Driving innovation	36 Driving innovation	39 Driving innovation
40 RESPECTING NATURE	**Respecting nature**	**Respecting nature**
41 Our approach to respecting nature	38 Our approach to respecting nature	41 Our approach to respecting nature
	38 Environmental collaborations	42 Environmental collaborations
41 Protecting biodiversity	39 Protecting biodiversity	43 Biodiversity and ecosystems
43 Circular economy and waste	40 Circular economy and waste	44 Resource use and circular economy
45 Conserving water resources	42 Conserving water resources	45 Conserving water resources
47 Air quality	44 Air quality	48 Air quality
48 POWERING LIVES	**Powering lives**	**Powering lives**
49 Our approach to powering lives	46 Our approach to powering lives	50 Our approach to powering lives
	46 Cost of living crisis	
49 Providing access to energy	46 Providing access to energy	50 Providing access to energy
50 Working with our suppliers	47 Working with our suppliers	51 Working with our suppliers
51 Contributing to communities	49 Contributing to communities	53 Contributing to communities
54 Diversity, equity and inclusion	52 Diversity, equity and inclusion	56 Diversity, equity and inclusion
55 Worker welfare	53 Worker welfare	57 Worker welfare

56 Respecting human rights	54 Respecting human rights	58 Respecting human rights
56 Managing our impact on people	55 Managing our impact on people	60 Managing our impact on people
		62 A just transition
59 GENERATING SHAREHOLDER VALUE	**Generating shareholder value**	**Sustainability in our oil and gas activities**
60 Our business activities	59 Our business activities	65 Our business activities
61 Embedding sustainability into projects	60 Producing oil and natural gas	66 Producing oil and natural gas
62 Producing oil and natural gas	61 Embedding sustainability into our activities	67 Embedding sustainability into our activities
63 Non-operated ventures	62 Non-operated ventures	68 Non-operated ventures
63 Divested ventures	62 Acquisitions and divestments	68 Acquisitions and divestments
64 OUR PERFORMANCE DATA	**Our performance data**	**Our performance data**
65 About our data	64 About our data	70 About our data
66 Our standards and policies	65 Our standards and policies	71 Our standards and policies
67 Our Powering Progress targets	66 Our Powering Progress targets	72 Our Powering Progress targets
68 Safety data	68 Safety data	73 Safety data
72 Greenhouse gas and energy data	71 Greenhouse gas and energy data	76 Greenhouse gas and energy data
78 Other environmental data	78 Other environmental data	83 Other environmental data
83 Social data	82 Social data	87 Social data
		92 Reconciliation of non-GAAP financial measures

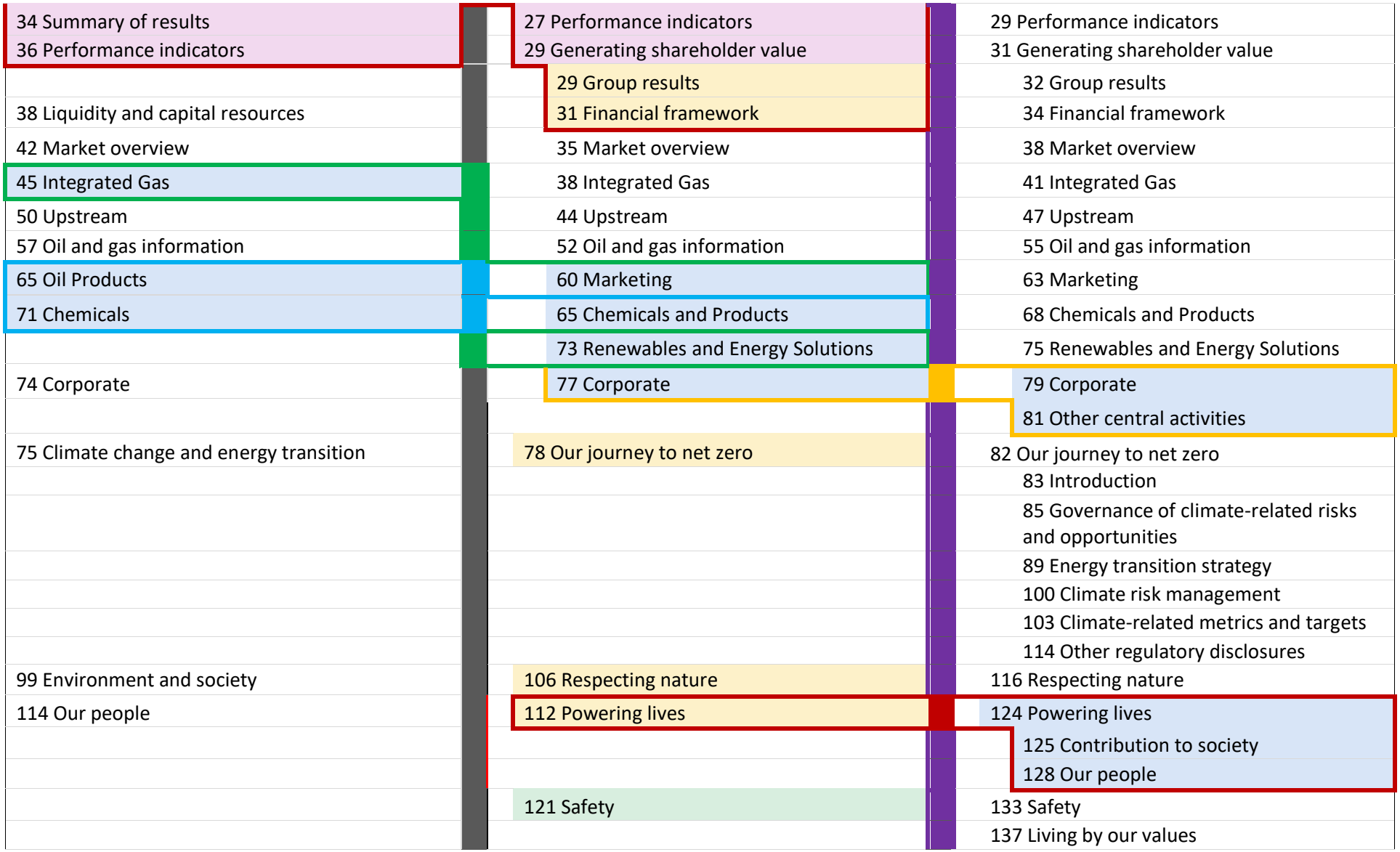
Appendix 4 – Annual Reports' Table of Contents comparison

The following table 4 presents the 'Table of Contents' segment of Shell's original AR 2021, 2022, and 2023 placed side by side to each other. The table itself is separated by two parts, the legend and the main table. Excluding the header year in shades of orange, all bold entries are defined as segments per the segmentation from the original AR. Any entries directly beneath these segments are defined as chapters. In addition, any entries underneath chapters with indentation are called sub-chapters. Furthermore, each segment and chapter are placed within the same row as their predecessors to indicate consistency and discrepancy. The comparison will be conducted against direct predecessors of each report, or in other words, AR 2022 to AR 2021 and AR 2023 to AR 2022. The observation will be indicated in accordance with the colour-coding defined in the legend, as described in Appendix 3.

Table 4. Table of contents from Shell's Annual report 2021, 2022, 2023 (adapted from Shell Plc, 2022a; Shell Plc, 2023b; Shell Plc, 2024c)

Legend:		
Same content, separated	Rename	Placement moved
New compared to previous year	Removed	

2021	2022	2023
Introduction	**Introduction**	**Introduction**
iii About this Report	iii About this Report	
iv Terms and abbreviations	iv Terms and abbreviations	iii Terms and abbreviations
Strategic Report	**Strategic Report**	**Strategic Report**
2 Chair's message	2 Chair's message	2 Chair's message
4 Chief Executive Officer's review	4 Chief Executive Officer's review	4 Chief Executive Officer's review
6 Shell Powering Progress	6 Powering Progress strategy	6 Powering Progress strategy
		6 Who we are
		7 Our strategy
10 Strategy and outlook		10 How we create value
16 Section 172(1) statement		12 Progress against our longer-term business targets
		13 Outlook for 2024 and beyond
22 Risk factors	15 Risk factors	14 Risk factors
	27 Progress on strategy – year in review	29 Performance in the year


34 Summary of results
36 Performance indicators
38 Liquidity and capital resources
42 Market overview
45 Integrated Gas
50 Upstream
57 Oil and gas information
65 Oil Products
71 Chemicals
74 Corporate
75 Climate change and energy transition
99 Environment and society
114 Our people
27 Performance indicators
29 Generating shareholder value
29 Group results
31 Financial framework
35 Market overview
38 Integrated Gas
44 Upstream
52 Oil and gas information
60 Marketing
65 Chemicals and Products
73 Renewables and Energy Solutions
77 Corporate
78 Our journey to net zero
106 Respecting nature
112 Powering lives
121 Safety
29 Performance indicators
31 Generating shareholder value
32 Group results
34 Financial framework
38 Market overview
41 Integrated Gas
47 Upstream
55 Oil and gas information
63 Marketing
68 Chemicals and Products
75 Renewables and Energy Solutions
79 Corporate
81 Other central activities
82 Our journey to net zero
83 Introduction
85 Governance of climate-related risks and opportunities
89 Energy transition strategy
100 Climate risk management
103 Climate-related metrics and targets
114 Other regulatory disclosures
116 Respecting nature
124 Powering lives
125 Contribution to society
128 Our people
133 Safety
137 Living by our values

	125 Principal decisions & stakeholders (Section 172(1) statement)	141 Principal decisions & stakeholders (Section 172(1) statement)
Governance	**Governance**	**Governance**
121 The Board of Shell plc	133 The Board of Shell plc	147 The Board of Shell plc
129 Senior Management	142 Senior management	155 Executive Committee
131 Introduction from the Chair	144 Introduction from the Chair	157 Introduction from the Chair
134 Statement of compliance with the UK Corporate Governance Code	147 Statement of compliance with the UK Corporate Governance Code	159 Statement of compliance with the UK Corporate Governance Code
135 Governance framework	148 Governance framework	160 Governance framework
137 Board activities and evaluation	150 Board activities	162 Board activities
	153 Board evaluation	166 Board evaluation
141 Understanding and engaging with our stakeholders	154 Understanding and engaging with our stakeholders	167 Understanding and engaging with our stakeholders
145 Workforce engagement	157 Workforce engagement	170 Workforce engagement
147 Nomination and Succession Committee	159 Nomination and Succession Committee	172 Nomination and Succession Committee
151 Safety, Environment and Sustainability Committee	163 Safety, Environment and Sustainability Committee	177 Sustainability Committee
153 Audit Committee Report	165 Audit Committee Report	179 Audit and Risk Committee Report
166 Directors' Remuneration Report	178 Directors' Remuneration Report	191 Directors' Remuneration Report
171 Annual Report on Remuneration	183 Annual Report on Remuneration	194 Annual Report on Remuneration
189 Directors' Remuneration Policy	203 Directors' Remuneration Policy	211 Directors' Remuneration Policy
198 Other regulatory and statutory information	211 Other regulatory and statutory information	219 Other regulatory and statutory information
Financial Statements and Supplements	**Financial Statements and Supplements**	**Financial Statements and Supplements**
208 Independent Auditor's Report related to the Consolidated and Parent Company Financial Statements	221 Independent Auditor's Report related to the Consolidated and Parent Company Financial Statements	229 Independent Auditor's Report related to the Consolidated and Parent Company Financial Statements
228 Consolidated Financial Statements	237 Consolidated Financial Statements	244 Consolidated Financial Statements
284 Supplementary information – oil and gas (unaudited)	308 Supplementary information - oil and gas (unaudited)	317 Supplementary information - oil and gas (unaudited)

302 Supplementary information – EU Taxonomy disclosure	327 Supplementary information - EU Taxonomy disclosure	336 Supplementary information - EU Taxonomy disclosure
305 Parent Company Financial Statements	340 Parent Company Financial Statements	350 Parent Company Financial Statements
314 Independent Auditor's Report related to the Royal Dutch Shell Dividend Access Trust Financial Statements	350 Independent Auditor's Report related to the Royal Dutch Shell Dividend Access Trust Financial Statements	
316 Royal Dutch Shell Dividend Access Trust Financial Statements	352 Royal Dutch Shell Dividend Access Trust Financial Statements	
Additional Information	**Additional Information**	**Additional Information**
321 Shareholder information	358 Shareholder information	361 Shareholder information
326 Non-GAAP measures reconciliations	362 Non-GAAP measures reconciliations	365 Non-GAAP measures reconciliations
331 Appendix 1: significant subsidiaries and other related undertakings (audited)	367 Appendix 1: Significant subsidiaries and other related undertakings (audited)	373 Appendix: Significant subsidiaries and other related undertakings (audited)
		v About this Report
347 Appendix 2: five-year financial dataset	388 Appendix 2: Five-year financial dataset	vii Financial calendar

Appendix 5 – Powering Progress strategy diagram and content sequence

This section will show the sequence identification of the Powering Progress' elements from SR and AR 2021, 2022, and 2023, along with the original screenshot from each report. Table 5 contains the legend numbering of each element for ease of identification, as well as the sequence identification below it – the numbering setup of the legend pertains no significance and has no meaning. Similarities found in these sequences is indicated with shades of yellow and orange for diagram and header or content respectively. Figure 11 to 16 contain the original screenshot labelled with the elements' numbering for ease of observation. Since the diagram and header exist within the same page for SR figure 11, 13, and 15, additional square-dashed markings are added as well – colours blue for the diagram and green for the header.

Table 5. Powering Progress' elements diagram and content-sequence with its legend

Powering Progress element	Legend
Generating shareholder value	1
Powering lives	2
Respecting nature	3
Achieving net-zero emissions	4

Sequence identification	Diagram	Header for SR / Content for AR
SR 2021 (Figure 11)	1, 3, 2, 4	4, 3, 2, 1
AR 2021 (Figure 12)	1, 2, 3, 4	1, 4, 2, 3
SR 2022 (Figure 13)	1, 2, 3, 4	4, 3, 2, 1
AR 2022 (Figure 14)	1, 2, 3, 4	1, 4, 2, 3
SR 2023 (Figure 15)	1, 3, 2, 4	4, 3, 2, 1
AR 2023 (Figure 16)	1, 3, 2, 4	1, 4, 2, 3

Figure 11. Shell's Powering Progress diagram and header in Sustainabiliy report 2021 and their sequences (from Shell Plc, 2022a, p.4)

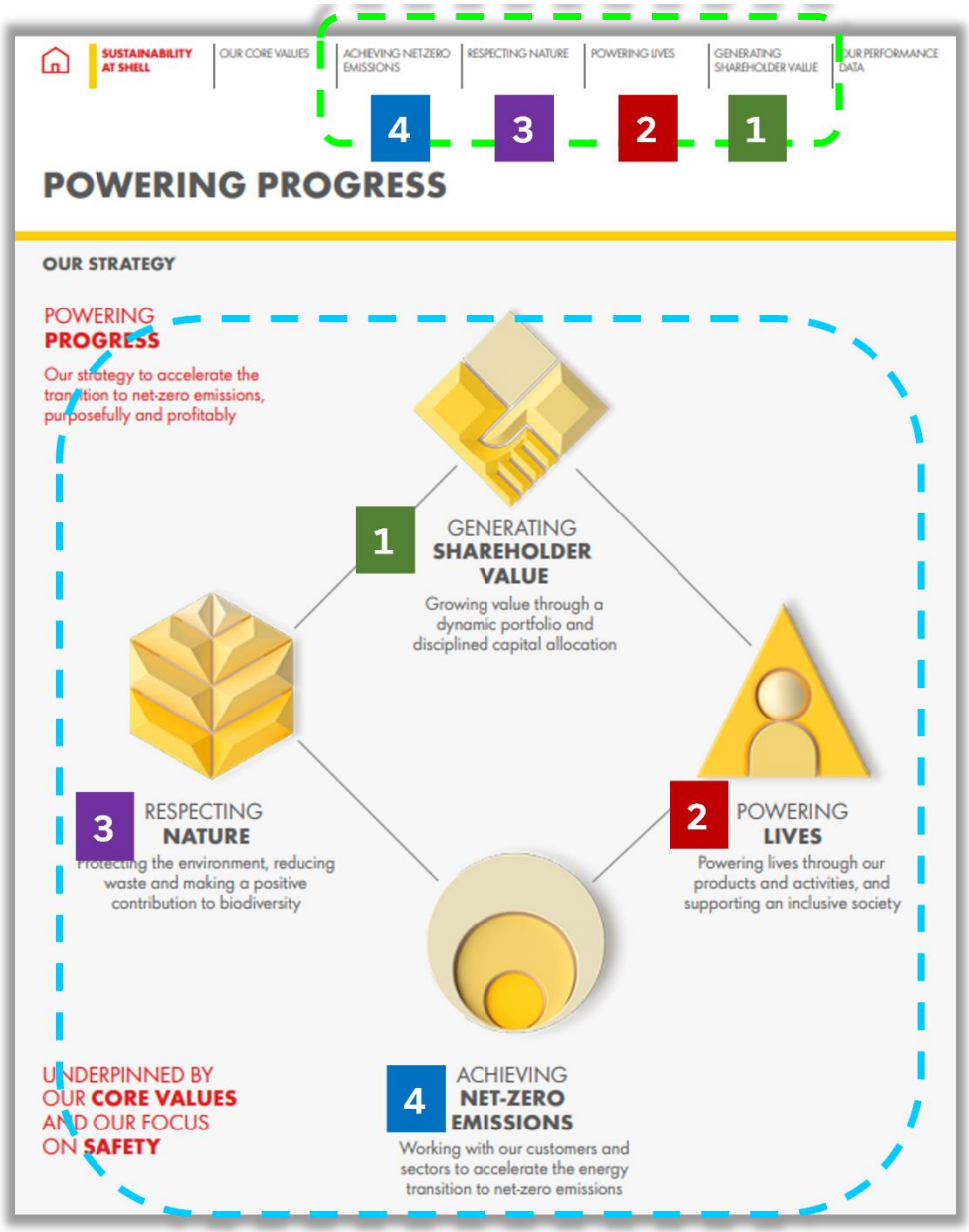


Figure 12. Shell's Powering Progress diagram and content in Annual report 2021 and their sequences (from Shell Plc, 2022b, p.7,12,13)

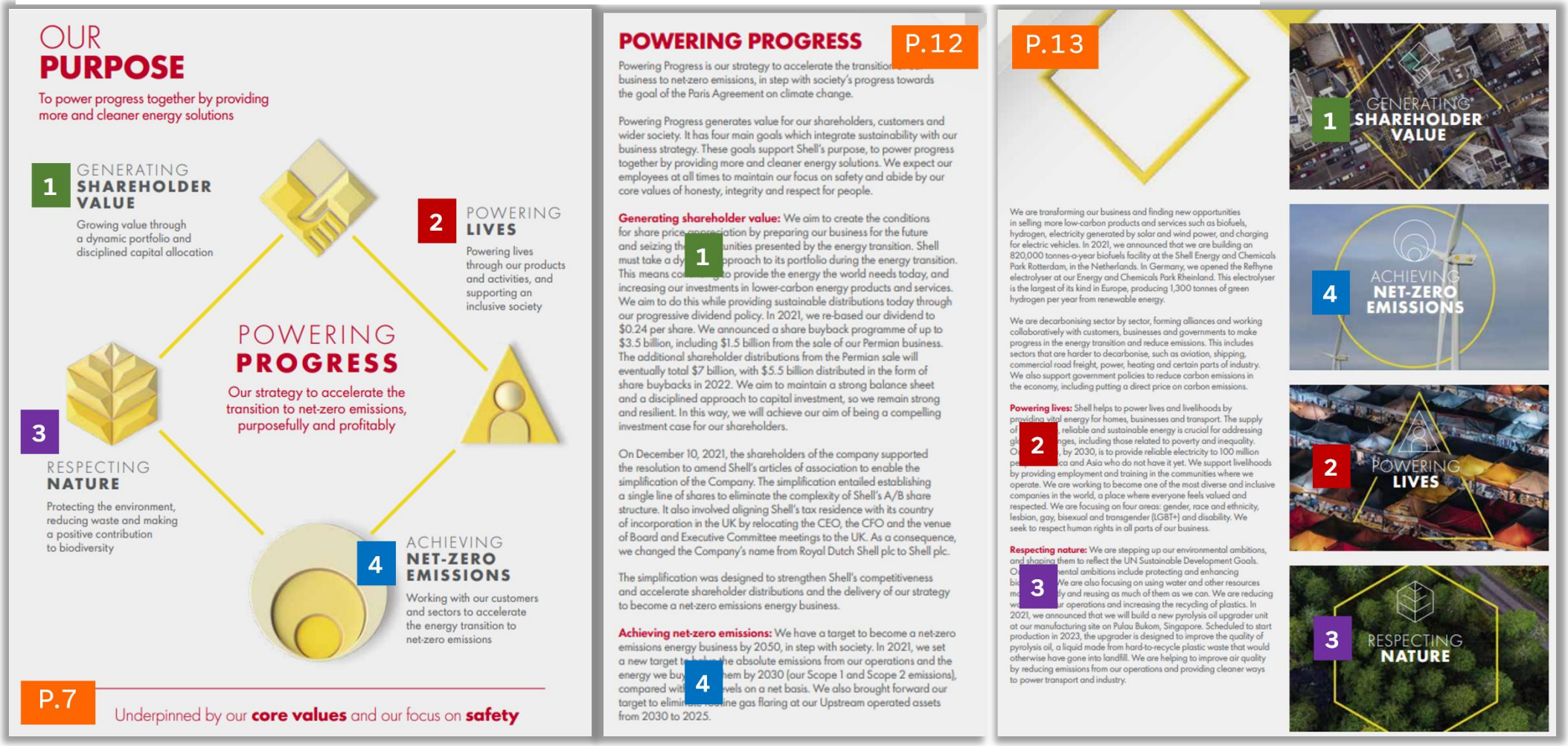


Figure 13. Shell's Powering Progress diagram and header in Sustainability report 2022 and their sequences (from Shell Plc, 2023a, p.4)

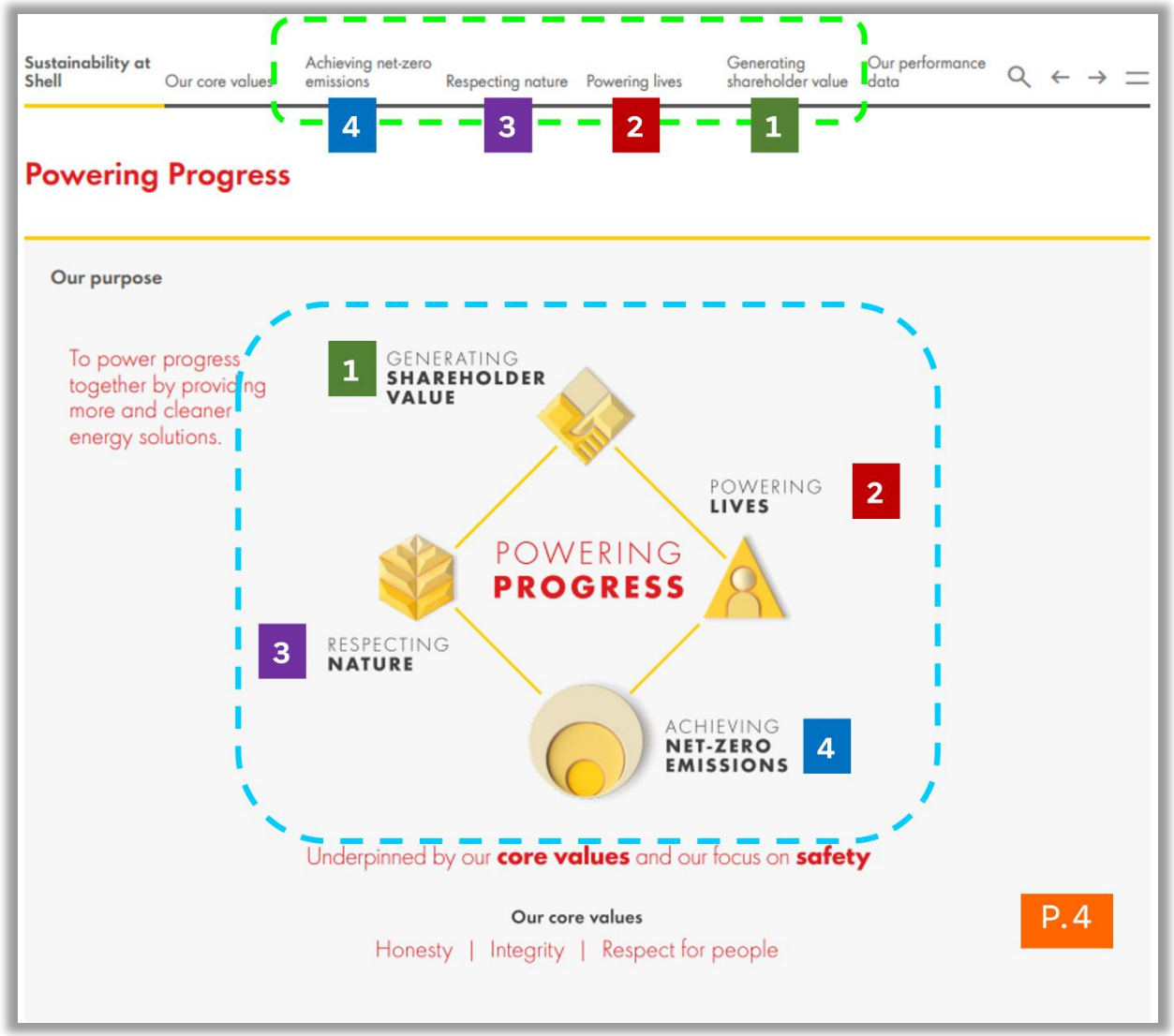


Figure 14. Shell's Powering Progress diagram and content in Annual report 2022 and their sequences (from Shell Plc, 2023b, p.7-9)

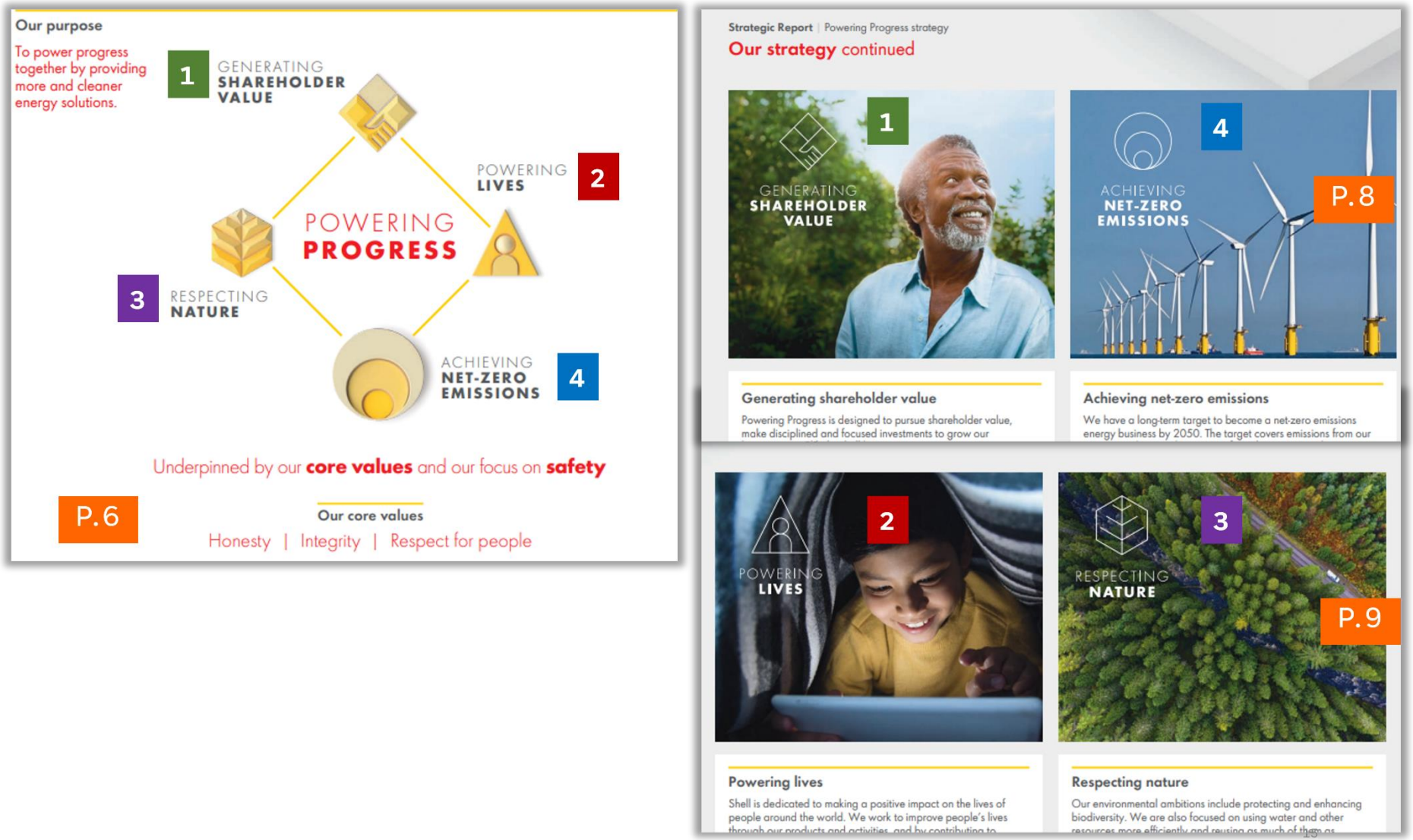


Figure 15. Shell's Powering Progress diagram and header in Sustainability report 2023 and their sequences (from Shell Plc, 2024b, p.4)

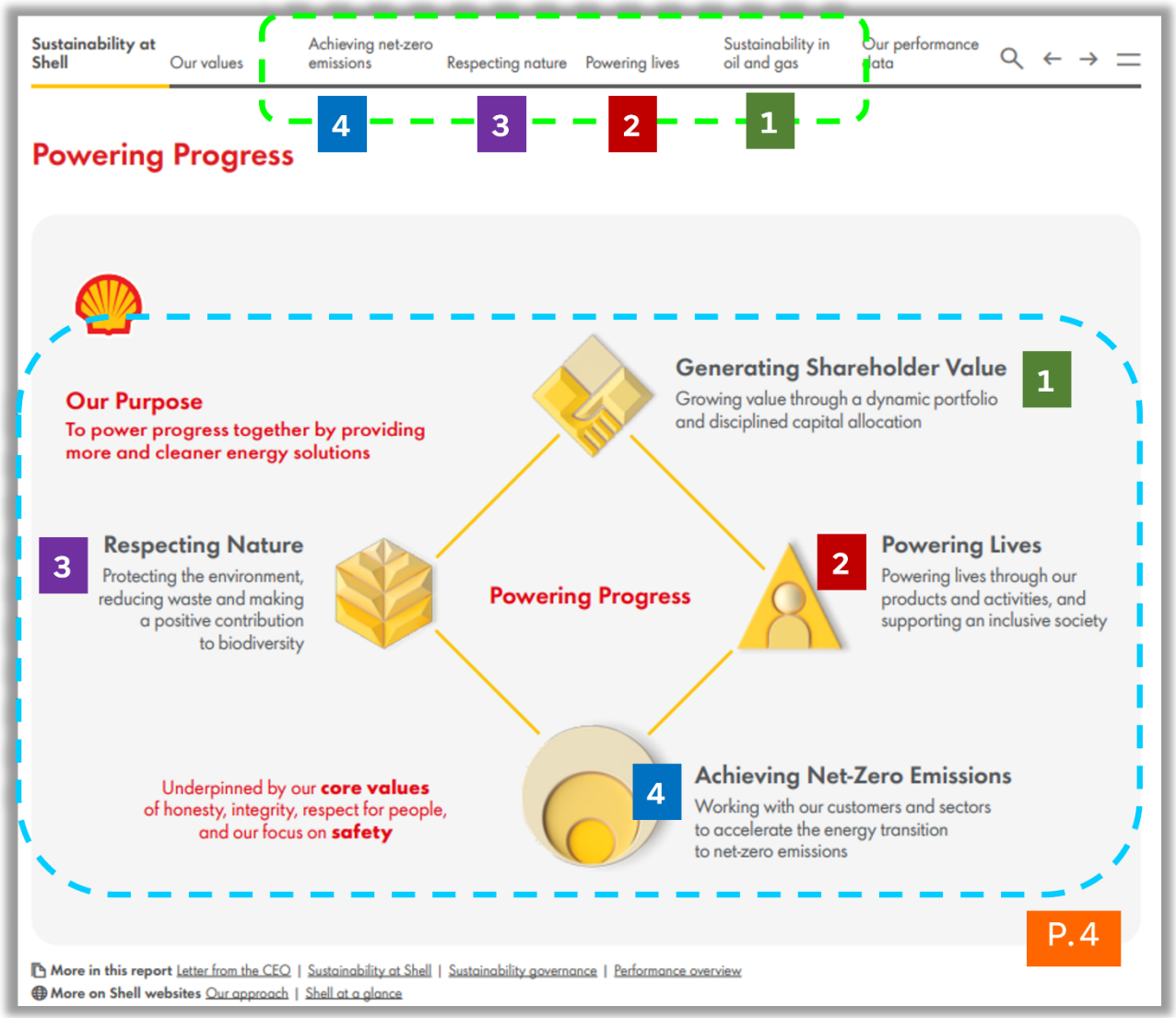


Figure 16. Shell's Powering Progress diagram and content in Annual report 2023 and their sequences (from Shell Plc, 2024c, p.7-9)

Appendix 6 – Highlighted performance statistics

The following table 6 and 7 are the list of keywords rankings and themes observed and identified within Shell's 2021, 2022, and 2023 Sustainability and Annual reporting. Table 6 is the list of top 20 most mentioned keywords as listed in table 7. The list is produced, from left to right, by sorting the overall reports combined, then SR and AR exclusively. While table 7 is the overall listed these themes, the details entailing its identification, relevant identified keyword(s) and their presence tallied within each respective SR and AR. Excluding the header, numbers highlighted in blue are the contrast within their particular keyword or category, red ones indicated absence of such keyword, and green ones indicate same patterns in the SR and AR year of that particular keyword. These keywords are counted using the find function in adobe reader and are manually tallied. Any keywords included in the topic, header, or any default reporting layout (such as "sustainability" in "sustainability report") that is irrelevant to the content of the report itself are excluded from these data.

Table 6. Keyword rankings based on Shell's overall reports, Sustainability reports, and Annual reports

Rank	Overall	SR	AR
#1	environment	Sustainability	energy transition
#2	energy transition	Safety	Chemicals
#3	Chemicals	Community	environment
#4	Safety	environment	dividends
#5	Oil and (natural) gas	bio	Oil and (natural) gas
#6	liquefied natural gas (LNG)	people	cash flow
#7	dividends	waste	liquefied natural gas (LNG)
#8	engage(ment)	human rights	engage(ment)
#9	cash flow	liquefied natural gas (LNG)	Safety
#10	bio	Renewable	Climate change
#11	Upstream	energy transition	Upstream
#12	Renewable	Oil and (natural) gas	Renewable
#13	Climate change	Upstream	governance
#14	Sustainability	biodiversity	compliance
#15	governance	Chemicals	bio
#16	people	Scope 1	technology
#17	solar	Net carbon intensity (NCI)	solar
#18	compliance	solar	Integrated gas
#19	technology	wind	people

#20	Community	Integrated gas	capital expenditure (capex)

Table 7. Themes identified within Shell's Sustainability and Annual report of 2021, 2022, and 2023

Themes	Details	Keywords	SR 21	SR 22	SR 23	AR 21	AR 22	AR 23	SR total	AR total	Both total	Total
Emphasising of core values	Reiteration of Shell's core values in honesty, integrity, respect for people, and focus on safety, which encompassed their Powering Progress strategy	core values	8	8	6	24	19	16	22	59	81	81
Net-zero emission	Addressing of Shell's commitment in becoming a net-zero emissions energy business, along with their emission classification.	net-zero emission	36	36	6	101	79	73	78	253	331	1307
		reducing emission	3	9	3	6	10	11	15	27	42	
		Scope 1	33	37	43	83	87	98	113	268	381	
		Scope 2	26	22	23	33	34	30	71	97	168	
		Scope 1 and 2	11	15	20	29	39	60	46	128	174	
		Scope 3	6	9	19	38	45	65	34	148	182	
		Scope 1, 2 and 3	0	0	1	12	8	8	1	28	29	
Targets	Shell's target year(s) in achieving their goals	2060	0	1	0	0	1	0	1	1	2	898
		2050	10	12	20	68	90	114	42	272	314	

		2040	0	1	0	5	7	5	1	17	18	
		2030	34	20	35	70	73	117	89	260	349	
		2025	18	22	23	29	47	76	63	152	215	
Collaboration, efforts and engagement	Mentions of collaboration with employees, stakeholder, suppliers, communities, and other parties to achieve their goal	Collaborat(ive/ion)	12	15	14	27	29	18	41	74	115	1190
		Global collaboration	0	0	0	1	1	1	0	3	3	
		partnership	13	13	12	31	17	13	38	61	99	
		engage(ment)	23	30	42	252	246	231	95	729	824	
		co-operation	0	1	4	7	3	3	5	13	18	
		working with	24	22	21	22	25	17	67	64	131	
Renewable energy	Highlights of aspects renewables and renewable energies	Renewable	32	41	80	115	258	243	153	616	769	2917
		wind	34	31	39	54	101	147	104	302	406	
		solar	30	35	42	26	206	274	107	506	613	
		biofuel	21	30	34	78	95	108	85	281	366	
		renewable energy	3	4	9	11	32	21	16	64	80	
		carbon capture (CCS)	26	32	38	57	99	81	96	237	333	
		Hydrogen	32	31	29	48	115	95	92	258	350	
Research and digitalisation	Mentions in efforts to drive sustainability and accelerate energy and mobility transformation	technology	10	20	32	156	168	187	62	511	573	780
		digital	3	2	4	25	25	43	9	93	102	
		research and development (R&D)	5 (only in 1 section)	8	10	24	27	31	23	82	105	
Circular economy	Efforts in reduction of waste towards a more sustainable process	Circular(ity / economy)	19	17	31	12	22	20	67	54	121	442
		waste	52	61	75	40	48	45	188	133	321	
Credible standardisation	Adherance or alignment to (international) credible standardisation	Adherence to	1	1	3	3	3	2	5	8	13	292
		Sustainable Development Goals (SDG)	8	8	9	10	7	8	25	25	50	
		Intergovernmental Panel on Climate Change (IPCC)	6	7	10	16	14	16	23	46	69	

		Organisation for Economic Co-operation and Development (OECD)	1	1	1	6	8	11	3	25	28	
		Paris Agreement	6	2	8	31	13	17	16	61	77	
		UN Universal Declaration of Human Rights	1	1	2	0	0	1	4	1	5	
		International Labour Organization	1	2	3	0	0	1	6	1	7	
		industry standard	7	8	9	1	3	2	24	6	30	
		industry benchmark	2	2	1	2	2	4	5	8	13	
Customer and society	Highlights in the role customer or society play in Shell's energy transition	in step with society	13	0	0	44	0	0	13	44	57	394
		to allow our customer to offset their emissions	1	0	0	0	0	0	1	0	1	
		customer who wish to	1	0	0	0	0	0	1	0	1	
		collaboratively with customer	0	0	0	1	1	0	0	2	2	
		working with customer	1	1	0	1	1	0	2	2	4	
		helping customer	0	0	0	1	2	0	0	3	3	
		society's	4	0	0	17	5	1	4	23	27	
		society	27	5	16	133	66	52	48	251	299	
Environment, carbon emission, and sustainability	Mentions in regards to environmental responsibility and issues	Sustainability	105	108	114	98	117	118	327	333	660	3333
		environmental impact	1	1	1	2	2	1	3	5	8	
		environment	81	88	105	336	320	273	274	929	1203	
		biodiversity	38	46	49	26	37	37	133	100	233	
		carbon emissions	9	8	9	39	43	40	26	122	148	
		Net carbon intensity (NCI)	26	39	47	69	97	91	112	257	369	
		Climate change	28	14	11	243	219	197	53	659	712	
Energy transition and low(er) carbon	Efforts in reducing or compensating	energy transition	43	41	68	328	325	335	152	988	1140	4092
		Decarbonisation	13	14	28	55	86	82	55	223	278	
		low-carbon	12	16	21	72	98	112	49	282	331	

	emissions, without eliminating it.	lower-carbon	13	18	16	28	26	35	47	89	136		
		bio	76	91	105	137	188	213	272	538	810		
		liquefied natural gas (LNG)	52	49	64	207	250	303	165	760	925		
		Gas-to-liquids (GTL)	19	17	27	33	40	53	63	126	189		
		CO2 compensated	1	1	1	0	0	0	3	0	3		
		carbon-neutral	1	1	1	2	1	1	3	4	7		
		carbon credits	11	27	39	5	27	32	77	64	141		
		nature-based solutions (NBS)	28	21	11	27	31	14	60	72	132		
Non-renewable operations	Mentions of Shell's non-renewable business stream	fossil fuel	1	2	1	12	14	13	4	39	43	3439	
		Oil and (natural) gas	34	46	66	272	301	283	146	856	1002		
		Chemicals	37	50	40	272	337	356	127	965	1092		
		Integrated gas	27	26	45	130	150	150	98	430	528		
		Upstream	43	37	64	207	212	211	144	630	774		
Covid-19 Pandemic	Highlights on the Covid-19 pandemic	covid-19	20	6	5	104	24	4	31	132	163	163	
Russian-Ukraine war	Features on the Russian-Ukraine war	War in Ukraine	1	6	0	0	5	0	7	5	12	77	
		invasion	0	5	0	11	34	9	5	54	59		
		Russia-Ukraine war	0	0	1	0	0	5	1	5	6		
Milieudefensie climate case	Mentions of the ongoing Milieudefensie climate case from the District Court in the Hague	ruling from District Court in The Hague	0	0	0	6	3	3	0	12	12	12	
Anthropocentric efforts	Addressing of social responsibility, diversity and humanitarian efforts	welfare	9	13	22	6	7	5	44	18	62	1788	
		human rights	39	50	92	33	51	41	181	125	306		
		people	50	73	82	156	131	138	205	425	630		

		Community	81	88	107	90	88	89	276	267	543	
		labour	7	9	15	8	14	13	31	35	66	
		LGBT(IQ)+	8	11	11	22	15	13	30	50	80	
		Disability	11	13	15	20	25	17	39	62	101	
Welfare	Highlights on welfare of Shell's stakeholders, particularly their employees	Safety	102	86	138	237	249	209	326	695	1021	1309
		Health	22	18	24	61	64	62	64	187	251	
		Well-being	1	3	0	9	12	12	4	33	37	
Corporate responsibility	Words related to ethical business and accountable practices	governance	11	13	14	207	196	192	38	595	633	1744
		compliance	8	14	10	183	178	181	32	542	574	
		ethics	15	13	14	80	71	68	42	219	261	
		dialogue	3	4	5	12	11	10	12	33	45	
		transparency	24	28	30	31	33	25	82	89	171	
		accountability	4	4	7	10	16	19	15	45	60	
Financial and operations	Terms related to Shell's financial health, financial performance, and stakeholder returns	cash flow	3 (only in annual bonus scorecard & incentive plan diagram)	3 (only in annual bonus scorecard & incentive plan diagram)	7 (more stats)	250	250	308	13	808	821	2331
		capital expenditure (capex)	2	4	12	100	160	153	18	413	431	
		financial result	0	0	1	13	12	11	1	36	37	
		dividends	2 (only in CN)	2 (only in CN)	2 (only in CN)	327	332	242	6	901	907	
		financial performance	0	0	0	13	14	12	0	39	39	

		shareholder return (TSR)	1 (only incentive plan diagram)	1 (only incentive plan diagram)	1 (only incentive plan diagram)	30	34	29	3	93	96	
Uncertainty and risks	Phrases related to disclaimers concerning unprecedented events	could cause	2 (only in CN)	2 (only in CN)	3	8	10	8	7	26	33	97
		risks associated with	0	3	4	11	12	9	7	32	39	
		Shell may not meet this target	1	1	1	0	2	1	3	3	6	
		uncertainties that could cause actual results	1 (only in CN)	1 (only in CN)	1 (only in CN)	5	6	5	3	16	19	
Forward-looking statements	Terms indicating future expectations and plans, as disclaimed in Shell's reportings	Aim	23	18	26	56	61	65	67	182	249	14194
		Ambition	38	33	31	63	54	70	102	187	289	
		Anticipate	1	1	1	12	15	13	3	40	43	
		Believe	5	5	12	85	77	59	22	221	243	
		Could	12	13	17	227	202	212	42	641	683	
		Estimate	31	31	32	233	214	216	94	663	757	
		Expect	20	27	40	282	297	276	87	855	942	
		Goals	30	15	20	76	45	44	65	165	230	
		Intend	8	6	8	51	62	47	22	160	182	
		May	26	27	27	311	325	311	80	947	1027	
		Milestones	1	1	1	6	5	3	3	14	17	
		Objectives	3	2	4	48	58	59	9	165	174	
		Outlook	4	3	2	83	83	78	9	244	253	
		Plan	36	57	81	702	741	738	174	2181	2355	
		Probably	1	1	1	7	3	2	3	12	15	
		Project	91	107	116	284	476	483	314	1243	1557	
		Risks	36	46	58	965	980	1111	140	3056	3196	
		Schedule	1	2	1	40	37	30	4	107	111	
		Seek	10	14	13	79	107	98	37	284	321	

		Should	4	6	10	65	56	46	20	167	187		
		Target	91	84	101	339	354	394	276	1087	1363		

Appendix 7 – Highlighted performance statistics

The following table 8 presents the 'Table of Contents' segment of Shell's original AR 2021, 2022, and 2023 placed side by side to each other. The table itself is separated by two parts, the legend and the main table. Excluding the header year in shades of orange, all bold entries are defined as segments per the segmentation from the original AR.

Table 8. Highlighted performance statistics in Shell's Sustainability and Annual report of 2021, 2022, and 2023 2023 (adapted from Shell Plc, 2022a; Shell Plc, 2022b; Shell Plc,2023a; Shell Plc, 2023b; Shell Plc, 2024b; Shell Plc, 2024c)

Report data first appeared in	Section which highlights the data		Performance data type	2020	2021	2022	2023	Remarks
	SR	AR						
SR & AR 2021	Chapter 'Social Performance Data'	How we create value' (chapter: 'Powering Progress strategy')	Number of employees (thousands)	87	82	93	103	
SR & AR 2021	Performance overview' (chapter 'Our approach to sustainability')		Number of training days (thousands)	234	271	266	295	
SR & AR 2021			Absolute emissions (Scope 1 and 2 – million tonnes of CO_2 equivalent)	72	68	58	57	83 in 2016
SR 2021			Reduction in our total combined Scope 1 and 2 absolute greenhouse gas emissions compared with 2016, the base year (%)		18%	30%	31%	
SR & AR 2021			Net carbon intensity (Scope 1, 2 and 3 – grams of CO_2 equivalent per megajoule)	75	77	76	74	79 in 2016
AR 2022			Methane emissions intensity for operated facilities with marketing gas		0.06 %	0.05 %	0.05 %	

SR & AR 2021			Women in senior leadership positions	28%	30%	30%	32%	
AR 2021			Taxes paid and collected ($ billion)	47	59	68	67	
SR & AR 2021			Total spend on goods and services ($ billion)	39	38	48* (42)	49	*2022 comparative has been revised following a new reporting methodology; Highlight is replaced with the performance type directly below in 2023
SR 2023			Spending on goods and services from suppliers based in the same country of operation			83%	83%	
SR 2021			Number of operational spills of more than 100 kilograms	70	41	54	70	Both 21 and 22 had 40% and 32% decrease compared to the previous year; Highlight is replaced with the performance type directly above in 2022
SR 2021 & AR 2022		Section 'Progress in the energy transition' (chapter 'Performance indicator')	Electric vehicle (EV) charge points (thousand)		87	139	196	Target: 500 thousand by 2025 in 2021 & 200 thousand in 2023; Is no longer a highlight
SR & AR 2023		Sub-chapter 'Progress against our longer-term business targets'	Eliminate routine flaring from upstream operations by 2025 (million tonnes)		0.2	0.1	0.1	Target: 0 by 2025
SR 2021			Flaring increase / decrease compared to the last year		18% increase	33% decrease	7% decrease	Highlight is replaced with the performance type directly above in 2023

SR 2021			Flaring in CO2e million tonnes	3.8	4.5	3	2.8	Highlight is replaced with the performance type 2 entries above in 2023
AR 2023		Sub-chapter 'Progress against our longer-term business targets'	Methane emissions intensity maintained below 0.2% until 2025 and achieve near-zero methane emissions by 2030		0.06 %	0.05 %	0.05 %	target 0 by 2030
SR 2021			Serious injuries and fatalities per 100 million working hours	6	6.9	1.7*	2.6	*Listed as 2.0 in SR 2023 with no disclaimer
SR 2021			operational process safety Tier 1 and 2 events, compared with 103 in 2020.	103	102*	66	63	*Listed as 103 in SR 2022 with no disclaimer
SR 2021			enhanced screenings for higher-risk contracts, to check for potential legal or regulatory integrity related red flags		2444			Highlight is replaced with the performance type below in 2022
SR 2022			reports to the Shell Global Helpline, where people can report potential breaches of the Code of Conduct		1479	1790	2134	
SR 2021			Biofuels went into Shell's petrol and diesel worldwide (billion litres)		9.1	9.5	9.7	
SR 2021			spent on voluntary social investment ($ million)		94	182	128	
SR 2021			students participated in NXplorers, our flagship STEM programme (thousands)		60	78,3	120	
AR 2021		How we create value' (chapter: Powering Progress strategy)	Equity attributable to Shell plc shareholders ($ billion)	155	172	190	187	
AR 2021			Non-current debt ($ billion)	91	81	75	71.6	Is removed as a highlight in 2023
AR 2023			Total debt ($ billion)			84	82	
AR 2021			Net debt ($ billion)	75	53	45	44	
AR 2021			Average capital employed ($ billion)	277	265	270	273	
AR 2021			Cash capital expenditure ($ billion)	18	20	25	24	
AR 2021			Refining and chemicals availability	96%	96%	96%	91%	
AR 2021			Oil & gas production available for sale (kboe/d)	3386	3237	2864	2791	
AR 2021			LNG liquefaction volumes (million tonnes)	33	31	30	28	

AR 2023			Ranking in the Global 500 list most valuable oil & gas company			1	1	
AR 2021			Customers, joint arrangements, Government relations, suppliers' operating countries	>70	>70	>70	>70	
AR 2021			Research and development expenses ($ million)	907	815	1075	1287	
AR 2021			Number of patents	8480	8532	10788	8829	
AR 2021			Proved oil and gas reserves (million boe)	9124	9365	9578	9787	
AR 2021			Energy consumed (million MWh)	241	223	209* (199)	205	*2022 figure restated, following the review of data.
AR 2021			Cash flow from operating activities ($ billion)	34	45	68	54	
AR 2021			Adjusted earnings ($ billion)	5	19	40	28	
AR 2021			Shareholder distributions ($ billion)	9	9	26	23	
AR 2023			Free cash flow			46	36	
AR 2021			Fresh water consumed in our facilities (million m^3)	22	22	18	17	25 in 2018
AR 2021			Waste disposed (million tonnes)	2	2	2	2	
AR 2022			Operational spills of more than 100 kilograms (thousand tonnes)		0.05	0.06	0.37	
AR 2021		Chapter 'Summary of results' in 2021 / sub-chapter 'Group results' in 2022 and 2023	Oil and gas production available for sale (thousand boe/d)	3386	3237	2864	2971	
AR 2021		Section 'Operational risk' (chapter 'Risk factors')	TOTAL Proved developed and undeveloped oil and gas reserves (million boe)	9124	9365	9578	9787	
AR 2022		Section 'Progress in the	Selling lower-carbon products		65%	60%	54%	*was a highlight in journey to net zero 22; was not displayed in 2021

AR 2022		energy transition' (chapter 'Performance indicator')	Reducing operational emissions (thousand tonnes CO2)		3988	2010	1081	*was a highlight in journey to net zero 22
AR 2021			Upstream and Integrated Gas greenhouse gas (GHG) intensity (tonnes of CO_2 equivalent/tonne of hydrocarbon production available for sale)	0.16	0.172			Not found in 2022 and 2023
AR 2021			Refining GHG intensity (tonnes of CO_2 equivalent/UEDC™	1.05	1.05			Not found in 2022 and 2023
AR 2021			Chemicals GHG intensity (tonnes of CO_2 equivalent/ tonne petrochemicals produced)	0.98	0.95			Not found in 2022 and 2023
AR 2021			GHG abatements (thousand tonnes of CO_2 equivalent)		279			Not found in 2022 and 2023
AR 2021		Chapter 'Intergrated gas' in 2021 / sub-chapter 'Renewables and energy solutions' in 2022 & 2023	Capital expenditure of renewables and energy solutions ($ billion)		1.8 / 2.4	2.9 / 3.5	2.3 / 2.7	
AR 2021		Section 'Carbon pricing' (chapter 'Climate change and energy transition' in 2021, chapter Our journey to net zero' in 2022 & 2023	Cost of carbon by 2050 at Shell's mid scenario ($ per tonne of GHG emissions)		125	125	125 - 170	
AR 2021			Cost of carbon by 2050 at Shell's high scenario ($ per tonne of GHG emissions)		200	220		No high scenario in 23
AR 2022		Sub-chapter 'Renewables and Energy Solutions'	Segment earnings ($ billion)		-1.5	-1.1	3	Was still combined with intergrated gas in 2021
AR 2022			Adjusted Earnings ($ billion)		-0.2	1.7	0.7	Was still combined with intergrated gas in 2021
AR 2022			Cash flow from operating activities ($ billion)		0.5	-6.4	3	Was still combined with intergrated gas in 2021

AR 2022			External power sales (terawatt hours)		247	243	279	Was still combined with intergrated gas in 2021
AR 2022			Sales of pipeline gas to end-use customers (terawatt hours)		899	843	738	Was still combined with intergrated gas in 2021
AR 2022			Renewable capacity (gigawatt)		3	6.4	6.6	Was still combined with intergrated gas in 2021; Is removed as a highlight in 2023
AR 2023		Sub-chapter 'Progress against our longer-term business targets'	Net-zero emissions by 2050 (Scope 1, 2 and 3) (million tonnes of CO2e)			1240	1185	1645 in 2016
AR 2023			Halving Scope 1 & 2 emissions by 2030 under operational control (2016 baseline) (million tonnes of CO2e)			58	57	83 in 2016; Target: 41 by 2030