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DOES ENVIRONMENTAL DISCLOSURE OF THE OIL AND GAS INDUSTRY COMPLY WITH THE GRI? EVIDENCE FROM INDONESIA

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ABSTRACT

The reporting of Corporate Environmental Responsibility (CER) shows the commitment of a company to minimize the negative impacts on the environment caused by its operations. This study attempts to analyze the level of compliance in terms of disclosure in CER reporting by companies operating in the oil and gas industry based on the GRI 300 Environmental Standards reporting guidelines. This study uses content analysis. The data were obtained from relevant documents: the annual and sustainability reports. The data were evaluated using coding techniques. The evaluation results show that Indonesia's oil and gas industry companies exhibit low-compliance in terms of disclosure in their CER reporting and a low compliance level in terms of regulations. Future research could investigate different sectors of the Indonesian economy to further analyze the practice of CER reporting in the country. Future research could also use other

data sources for content analysis instead of annual and sustainability reports.

Keywords: CER, disclosure, oil and gas industry, GRI standards, environment.

INTRODUCTION

Corporate Social Responsibility (CSR) is becoming increasingly important today, and it can take many forms, including product and financial donations, community employee services, environmental protection practices, and other original ways that companies can give back to the community (Feronika et al., 2020). One of the issues addressed by CSR is overcoming environmental problems through environmental preservation, especially in extractive industries, such as oil and gas, that operate by exploring natural resources (Feronika et al., 2020). In the past few decades, as stakeholders' requirements for social responsibility and environmental awareness in the organization's business operations have greatly increased, the environmental aspects of corporate responsibility have been widely debated (Duker & Olugunna, 2014).

One subset of CSR is more commonly known as Corporate Environmental Responsibility (CER). Lyon and Maxwell (2008) define CER as environmentally-friendly actions not mandated by law which are also referred to as going beyond compliance or voluntarily internalizing externalities (Sindhi & Kumar, 2012). Kusku (2007) broadly describes CER as preventive measures and policies adopted by the organization to reduce and prevent damage to the environment and the participation of stakeholders to increase transparency (Sindhi & Kumar, 2012). Thus, CER focuses on a company's responsibility in managing the impacts on, and degradation of, the environment caused by its business activities. More specifically, in essence, CER attempts to minimize the impact of damage arising from damage to environmental sustainability because excessive exploitation will damage the ecosystem, which can threaten the community's economic activities (Feronika et al., 2020).

The effort to instill CER in Indonesia's companies is not a foreign concept. Over the years, the Indonesian government has taken the initiative to reduce pollution in the country. Through the promulgation

of Law No.22 in 2001, efforts were made to formulate appropriate laws. The law necessitates companies in the oil and gas industry to prevent and manage pollution and restore any environmental degradation, including post-mining operations. In 2007, the government additionally promulgated a new Limited Company Law No.40 of 2007, which stipulates that any company that uses natural resources, or does not directly use natural resources but has an impact on the environment as a result of its operations, must carry out social and environmental responsibility activities (Government of Indonesia 2007). Furthermore, in 2012, the Indonesian government issued a Government Regulation (Peraturan Pemerintah or PP) No. 47 of 2012 which obliges companies to report on their social and environmental activities in annual reports (Yaya et al. 2018). The new PP 47/2012 is a follow-up to the Limited Company Law 40/2007 to further strengthen its CSR agenda (Government of Indonesia 2012). Subsequently, Indonesian companies have been obliged to carry out social and environmental activities and must disclose their social and environmental activities in their annual reports (Government of Indonesia 2012). Based on the explanation above, it can be seen that CSR reporting and disclosure requirements, including the environmental report, already exist in Indonesia. However, while we can observe companies following regulations and disclosing environmental information in their reports, as mandated by PP 47/2012, there is a problem with the quality of the information they disclose and their compliance with the regulations.

Considering the serious detrimental effect of oil and gas exploration such as accidental spillage and pollutants from water and oil-based waste (Njuguna et al., 2022), international laws and regulations concerning these industries have been enacted (Yin, 2021). At the country level, different governments have also issued specific regulations, such as the UK establishing the regulation on health, safety, and environment (Acheampong & Kemp, 2022; Acheamponga et al., 2021). This includes the regulation of disclose of non-financial information related to their activities (Badia et al., 2021; Healy & Serafeim, 2020) and risk-specific information within the oil and gas industry (Mcchlery & Hussainey, 2021). However, due to the different applicable legislation for the disclosure of non-financial information in different countries, there are some differences between the reporting models (Hąbek & Wolniak, 2016). Orens and Lybaert (2013) highlight that there is no uniform reporting format for non-financial disclosure, so there are differences in the presentation of

such information between companies, which increases the complexity of the analysis of non-financial information. The implication of this is that problems related to the lack of non-financial information still exist, especially in terms of the quantity and quality of information. With a lack of clearly standardized guidelines in a country, environmental disclosures merely serve as tools contributing to private interests (Basalsamah and Jermias 2005). Moreover, this makes the level and number of corporate responsibility reports in Indonesia relatively low, causing people to worry about the role of the company, especially in terms of its social responsibility (Utama 2011). This means that management will only disclose selected information about its social and environmental performance if they believe that the supply of that information is essential for its survival.

As such, along with the newly enforced government mandate in 2012, companies in Indonesia started adopting international standards for their reports. One of the most commonly applied set of standards is the sustainability reporting guidelines issued by the Global Reporting Initiative (GRI). The objective of GRI is to establish a global framework as a tool or mechanism for accountability to evaluate the responsibility taken by corporations toward the environment (Sethi et al., 2017). Therefore, the GRI encourages dialogues between companies and stakeholders through disclosing the general standard disclosure (including organizational profiles and strategies), and specific standard disclosure (including management approaches and performance indicators) to address economic, social, and environmental issues (Sethi et al., 2017; Vigneau et al., 2015).

Compared to other frameworks, such as ISO 26000 which has dimensions that are analyzed in an isolated manner (Maas et al. (2016), the GRI framework is a comprehensive framework of principles, disclosure standards, indicators of reporting, and it is augmented by a sector-specific supplement (Alazzani & Wan-Hussin, 2013). The framework covers three aspects: economic, social, and environmental. The GRI framework guides companies to fulfill their responsibility in providing sustainability reports with better comparability across countries. Therefore, the GRI framework is universally considered to be the most widely used sustainability reporting tool; the performance indicators listed in it are used to track and report on the economic, environmental, and social performance of the company, and it is also known as the ‘triple bottom line’ or ‘people, planet, profit’ report (GRI 2020).

There is much existing literature on the topic of CER, environmental reporting, and GRI-based indicators. Previous studies that have been conducted on the topic of CER often focus broadly on companies' lack of compliance in terms of CSR reporting, such as the information disclosed being lacking in quality, non-compliant, and incomplete (Adams 2004; Rusmanto and Williams 2015; Hąbek and Wolniak 2016; Faisal, Napitupulu, and Chariri 2019), whether it be in the context of Indonesia or other countries. Some of the studies have pointed towards the fulfillment of stakeholders and legitimacy theories as justification for such conformity (Basalamah and Jermias 2005; O'Dwyer, Owen, and Unerman 2011; Cho et al. 2012; Duker and Olugunna 2014). Otherwise, the focus of CER has been on mandatory discourse versus voluntary methods of disclosure (Gayo 2012), which is a matter of ethics.

Previous studies about environmental disclosures that use the GRI standards are also lacking, especially in the Indonesian oil and gas industry. Existing studies using petrochemical companies were carried out in the context of Malaysia (Samuel, Agamuthu, and Hashim 2013) or multiple multinational companies (MNCs) from different countries, including Canada, Austria, Australia, and Malaysia (Alazzani and Wan-Hussin 2013) while the ones carried out in Indonesia, such as Yaya et al. (2018), involved various industries and did not focus on the oil and gas sector, which significantly impacts the environment. Furthermore, most of the studies about environmental disclosure in Indonesia, disregarding GRI standards, were undertaken before the issuance of PP 47/2012 (Yaya et al. 2018), which means that they do not consider the shift from voluntary to mandatory disclosure in Indonesia. With this new regulation, the participation of Indonesian companies in CER activities is expected to increase and the quality of their social and environmental reports will improve.

In addition, previous studies concerning environmental disclosure standards have been primarily conducted in developed countries as most CSR concepts, including CER, have been explored in developed countries where government interference is bound to the market (Zainal 2019). Governments in developing countries may have limited freedom to intervene in companies' proceedings, particularly MNCs, to involve them in development issues (Zainal 2019). Thus, this study can contribute to Indonesia's CSR agenda as a developing country in terms of environmental aspects, which, admittedly, is still lacking.

Most of all, there is an apparent lack of specific analysis of the level of compliance in companies' environmental reporting in Indonesia, particularly in the oil and gas industry, using the internationally acknowledged GRI Standards. Furthermore, most of the studies have been conducted using the research methods of literature review, such as Basalamah and Jermias (2005), Sukoharsono (2007), Tilt (2009), O'Dwyer et al. (2011), and Abernathy et al. (2017) and thus there are limitations in the empirical studies. So there is this gap in the CER literature mentioned above that this paper attempts to fill.

This research was conducted using selected companies in the oil and gas industry. It was carried out by examining the sustainable reports and other relevant documents. Next, the reports were compared to established environmental performance indicators adapted from the Sustainability Reporting Guidelines issued by the GRI. The GRI guidelines have been selected for the basis of comparison because they are more detailed in their clauses than other environmental reporting guidelines such as ISO 26000 issued by the International Organization of Standardization (ISO). ISO 26000 and the GRI guidelines have significant overlap and concurrence regarding the topics they cover, but GRI covers the same aspects as ISO 26000 in more specified sections.

Based on the background and problem identification laid out above, this research will attempt to find answers to the following two questions: (1) Do the oil and gas companies in Indonesia fulfill their CER? (2) What is the level of compliance of the environmental reporting to the GRI guidelines among the oil and gas companies in Indonesia?

Environmental Reporting Practices

As mentioned, CER disclosure is the process of conveying information about the environmental impact and economic actions of an organization to specific groups in the broader community (Sukoharsono 2007). In short, a company provides environmental reporting for several reasons, such as gaining legitimacy as a responsible company in the eyes of the public and facilitating the stakeholders' needs (Way et al., 2016). However, the issue with CER disclosure is that it may not be adequately communicated or not packaged in an effective communication medium (Ingenhoff and Sommer 2014). When that happens, the community cannot assess and interpret the

objectives, issues, programs, and activities of the company's CER as they have difficulty obtaining relevant and complete information. For this reason, companies need to disclose CER information adequately and have it reported publicly on company websites that are easily accessible to the public.

There is a body of literature examining and comparing the differences in the quality and transparency of reports between industries and countries. The industries that have been most frequently studied have been those perceived as environmentally sensitive, in which oil companies were among the first groups to report on environmental issues (Romero et al. 2014). However, as to be expected, the practice of environmental reporting often differs from country to country. In some countries, full environmental disclosure is required by law, regulations, or accounting standards, whereas in others, it is not regulated but rather a voluntary act. According to one report on global trends in sustainability reporting regulation and policy (King et al., 2016), of 400 sustainability reporting instruments in 64 countries, 65% of them were mandatory. The European Countries Directive on disclosure of non-financial and diversity information issued in 2013 required publicly listed companies and public-interest companies to disclose policies related to risks and outcomes that have an impact on the material environment, and social and employee-related matters. The countries that mandate the sustainability reporting are Denmark, Sweden, France, the United Kingdom, and the Netherlands. There is also reported that many countries issue regulations on sustainability reporting, such as Argentina and Brazil in Latin America and India, Indonesia, Malaysia, and South Korea in the Asia Pacific region (King et al., 2016).

There are various guidelines and recommendations for sustainability reporting, but the most prominent and widely adopted one is the GRI (Alonso-Almeida et al., 2014). The GRI was established by the Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environmental Programme (UNEP) in 1997 (Isaksson & Steimle, 2009) as a voluntary cooperative initiative to provide a regulated and universally accepted sustainability reporting framework (GRI 2020). From the beginning, the objective of GRI has been to provide guidelines to disclose a clearer vision of the human and environmental impact of a corporation. Having the standard will make it possible to conduct comparisons and benchmarks among different entities; thus, the framework elevates the sustainability

report to have the same rigor as the financial report (Alonso-Almeida et al., 2014). The GRI framework is universally considered to be the most widely used sustainability reporting tool; the performance indicators listed in it are used to track and report on the company's economic, environmental, and social performance, also known as the 'triple bottom line or 'people, planet, profit' report (GRI 2020).

Since its inception, the GRI has launched four generations of reporting guidelines (G1, G2, G3, G4). The G4 was launched in May 2013; it has been used to full effect as of 2015 (KPMG International 2013) and is continuously updated. Sustainability reports can help organizations set goals, measure performance, and manage changes to make their operations more sustainable (Buck et al. 2014). The G4 offers Reporting Principles, Standard Disclosures, and an Implementation Manual to prepare sustainability reports by organizations (GRI 2013). The Reporting Principles are indispensable for accomplishing transparency in sustainability reporting and therefore should be implemented by all organizations. The Implementation Manual outlines the required steps for an organization in the decision-making process in line with the Reporting Principles.

The GRI is favored over other reporting guidelines, such as ISO 26000 by the International Organization of Standardization (ISO), for the basis of comparison because it is more detailed in its clauses. ISO 26000 and the GRI guidelines have significant overlap and convergence regarding the topics they cover, but GRI covers the same aspects as ISO 26000 in more specified sections. The indicators provided by GRI guidelines are more specific and detailed than those of ISO 26000. In July 2018, the GRI fully transitioned from their G4 guidelines to the Sustainability Reporting Standards (GRI Standards) as the new disclosure requirements for sustainability reporting (Baillly-Leclerc 2016). The Standards are mandatory for all reports or other materials that refer to the GRI framework published on 1 July 2018. The standards aim to restructure the G4 guidelines, not adding new content (Pusaka 2017). As such, there is a new modular structure that comprises three universal standards modules, namely GRI 101 Foundation, GRI 102 General Disclosure, and GRI 103 Management Approach, and 33 topic-specific standards under three main modules GRI 200 Economy, GRI 300 Environment, and GRI 400 Social (Pusaka 2017). This research will focus on the disclosure standards published in GRI Standards instead of G4 as the content is mostly the same but with the latest update by GRI.

METHODOLOGY

Despite the number of companies engaging in sustainability reporting increasing, an issue has emerged regarding the completeness of information these companies disclose (Hąbek & Wolniak, 2016) because they do not disclose the information comprehensively following the standards. Therefore, this research aims to analyze the level of compliance of environmental reporting to the GRI Standards indicators. Thus, this study uses a qualitative approach to evaluate the disclosure of CSR information as it is appropriate for answering this research's questions to determine the compliance of disclosure, exploration, and understanding of the meaning of the information disclosed by companies in CSR reports.

Content Analysis

This study uses Krippendorff's procedure (2004) as a research design guide for implementing content analysis. The procedure is explained below. The first step was unitizing. The researchers determined the type of data to be analyzed and the part of the report used as the unit of analysis. The data analyzed in the content analysis technique could be in text, images, sound, and other data that could be further observed (Krippendorff 2004). This research used data in the form of text to be analyzed according to GRI Standards for presenting CER information disclosure.

The next step was sampling. The researchers determined the part of the document that would be the focus of the research. The documents used in this research were the sustainability reports and the parts of the annual reports that focused on sustainability, namely the CER report used by companies to report CER activities' realization. Next, the researchers moved on to the coding stage. At this stage, the researchers needed to consider coder qualifications, training for coders, and making coding sheets. Researchers used coders with educational backgrounds in accounting and had experience in research on CER. Having a coder who already had a prior understanding of CER facilitated unifying the perspectives on the topic studied by the authors. In addition, to maximize the common understanding of the issues to be studied, the researchers also conducted briefings for coders at the early stages of the coding process. The information about the coders is described in Table 1 below.

Table 1

Coders' Information

Coder	Qualifications	M/F
Coder 1 (Researcher)	<ul style="list-style-type: none">• Accounting background• Experience in research on the topic of CER	F
Coder 2	<ul style="list-style-type: none">• Accounting background• Experience in research on the topic of CSR	F
Coder 3	<ul style="list-style-type: none">• Accounting background• Experience in research on the topic of accounting reports and disclosure	M

The creation of the coding sheets in this study were carried out according to the GRI Standards. The coding sheets were based on the 32 disclosure indicators drawn from the GRI Standards. The 32 indicators help explain the elements of the company's issues, further explaining the CER activities. After the coding process as complete, the coder then proceeds to the scoring process. Scoring was done by considering the extent of disclosure, which refers to the criteria for the scaling system. The last stages were the evaluation and the analytical construct. Data analysis and evaluation related to the quality of disclosure were carried out. It was expected that the 32 indicators would represent the quality of disclosure for CER based on GRI Standards. In doing so, an analytical construction was required to evaluate the company's commitment to implementing the eight main subjects of sustainability reporting implementation. The analytical construction was carried out to provide a model of the relationship between the text and the intended conclusion (Krippendorff 2004). Data analysis and overall data evaluation from Coder 1, Coder 2, and Coder 3 were carried out by researchers after all the coders had finished and collected the results of the data that had been evaluated.

Population and Sample

The population in this research refers to companies operating in the Indonesian oil and gas sector, whose main operation is extractive in nature. Indonesia has a state-owned enterprise (SOE) engaged in the oil and gas sector, namely PT. Pertamina (hereinafter Pertamina). There are also eight public limited liability companies (LLCs) listed on the Indonesia Stock Exchange (IDX) that are engaged in the mining sector, specifically the oil and gas sub-sector. In total, there are nine companies in the population.

Furthermore, the sample in this study was selected using a purposive sampling technique. Purposive sampling is also called an evaluation sample, or an expert sample which is a non-probability sample (Sugiyono 2008). The main purpose of purposive sampling is to produce a sample that can logically be considered representative of the population (Sugiyono 2008). Based on this definition and for this research, it was decided that the sampling would use the following criteria:

- 1) The company must have a published annual report or sustainability report available to the public and disclose the environmental information about the company's operations.
- 2) The company's published reports must span five consecutive years from 2016 to 2020. This is because the latest general update to the GRI Standards was in 2016 (GRI 2020), and the most recent publication for companies was in 2020.

Out of the study's population, only five of the companies met all the criteria for sampling. Most of the companies did not have complete reports from 2016 to 2020, usually with 2020 missing or the older reports no longer available on the website. Therefore, for this research, five companies were used as the sample to represent the population. The list of companies is summarized in Table 2 below.

Table 2

Sample Table

No.	Company Name	Code	Type
1.	PT. Pertamina	PERTAMINA	State-Owned Enterprise (SOE)
2.	PT. Apexindo Pratama Duta Tbk.	APEX	Public Limited Liability Companies (PLLC)
3.	PT. Elnusa Tbk.	ELSA	PLLC
4.	PT. Surya Esa Perkasa Tbk.	ESSA	PLLC
5.	PT. Radiant Utama Interinsco Tbk.	RUIS	PLLC

Data Analysis Techniques

The data in this study were analyzed using coding and scoring according to Krippendorff (2004) and Seuring & Gold (2012). The coding and scoring techniques were carried out as follows.

Coding Technique

A coding technique was carried out in this study because it made it easier for the researchers to uncover the essence of what the company wanted to disclose. The coding in this study is divided into two parts, namely trial coding, and the coding process according to procedures developed by Krippendorf (2004) and Seuring and Gold (2011). The coding trial was carried out in this study so that the researchers would be more familiar with the indicators and elements of the coding sheet that had been formulated. In addition, it also allowed the researchers to revise the less relevant parts of the indicators, which also increases the validity of the study.

The next stage is to input all the data collected. The input process was carried out separately between coders, then compared when all input processes had been completed. This is intended to minimize subjectivity between coders. In addition, the process of scaling is carried out by each coder first, and the coder makes a recap of the results. The comparison of the input results then ends with an agreement on the differences in the analysis results between the coders. This process is expected to increase the reliability of the data that had been inputted. Furthermore, to facilitate researchers in identifying the extent of disclosure of CER information, researchers used a rating scale for the type of information disclosed. A rating scale was also used to facilitate the reader in knowing the conclusions and results of research related to the positive and negative evaluation of the information disclosed.

Rating Scale for Scoring

The provision of a rating scale is expected to explain the quality of CER information disclosed by the company and facilitate the researchers in concluding this study. To measure the quality of the disclosure, the indicator scoring system in this study accounts for criteria with qualitative and quantitative characteristics, as Cantele, Tsalis, and Nikolaou (2018) suggested. The indicator requirements used are adapted from the reporting requirements for each sub-topic per GRI Standards. The rating scale in this study refers to several previous studies (Cantele, Tsalis, and Nikolaou 2018), which the researchers have modified. The researchers use a rating system on a scale of 0 to 3 for the disclosure of information, as follows:

Rating of 0 points: No disclosure.

Rating of 1 point: Disclosure in short statements (qualitative or quantitative data).

Rating of 2 points: Disclosure with qualitative explanations.

Rating of 3 points: Disclosure with qualitative explanations and relevant additional information (such as management CER expectations and targets, benchmarks, tables, or figures to support data).

To obtain the index of the quality of the company's CER disclosure, the total score of the CER disclosure quality of each company is compared with the total score of maximum disclosure, then converted into a percentage. To determine whether or not the quality of CER information disclosure is ideal, the calculation results are classified into five grading system levels, as shown in Table 3 below. After being converted into percentages and classified based on the quality of the disclosure group, a more in-depth and detailed discussion will be carried out on the obtained data.

Table 3

Classifications of the Quality of CER Disclosure

Percentage	Grade
>85%	Excellent
>70%-85%	Good
>50%-70%	Adequate
30%-50%	Below Average
<30%	Poor

Reliability and Validity Tests

The researchers followed a series of content analysis procedures in a research design adapted from Krippendorff (2004) to increase the reliability of this study. The procedures include unitizing, sampling, coding, evaluation, and analytical constructs. This series of procedures made it easier for researchers to conduct research, and other researchers could also apply these procedures. In addition, the reliability and validity tests in this study were carried out using coder triangulation (Sekaran and Bougie 2016). This is intended to avoid the subjectivity of researchers when they are making evaluations. Based on this, the researchers used three coders based on specific criteria and processes with the same amount of data so that the assessment of each coder could be compared. Lastly, a trial run of the assessment indicators was conducted to make the researchers more familiar with

the coding process and possibly revise the indicators to describe the analyzed data better. It was also intended to increase the validity of the results of this study.

FINDINGS

Table 4 below summarizes the quality of the disclosure of CER information in Indonesia's oil and gas industry measured by percentage. The table shows each company's environmental disclosure scores per year, with a breakdown of the eight sub-topics under GRI 300 Environmental Standards. The scores of each sub-topic were calculated according to the points given to the indicator requirements in the coding sheet out of the maximum points to get the percentages. The total percentages of the three coders were then calculated to find the average percentages presented below.

Table 4

Quality of CER Disclosure of Companies (in percentage)

Company	2016	2017	2018	2019	2020	Average
Pertamina	22.00	28.67	48.69	49.55	59.02	41.59
APEX	1.04	1.04	0.00	0.00	0.00	0.42
ELSA	12.70	27.40	34.60	35.21	35.10	29.00
ESSA	2.78	2.89	3.77	3.30	3.30	3.21
RUIS	0.60	0.50	0.70	0.70	0.70	0.64

As can be seen from Table 4, only Pertamina and PT. Elnusa Tbk. (ELSA) did considerably well in their disclosure of environmental information. The researchers also observed that these two companies are also the only ones out of the sample who published sustainability reports instead of annual reports. Indeed, sustainability reports contain a more detailed explanation of a company's CER efforts, derived from the observation mentioned above.

On the other hand, PT. Apexindo Pratama Duta Tbk. (APEX), PT. Surya Esa Perkasa Tbk. (ESSA), and PT. Radiant Utama Interinsco Tbk. (RUIS) had their environmental reporting under the CSR section of their annual reports. The annual report is a financial summary of the company's activities in one year (Jurnal ID 2019). The CSR

section in an annual report is typically only a few pages long, as was the case with these three companies, and thus does not contain as much information as sustainability reports. Therefore, the quality of disclosure of the companies who published sustainability reports is much higher than those who published annual reports.

Table 5

Compliance Analysis of Pertamina

Sub-Topic	2016	2017	2018	2019	2020
Materials	0.00	0.00	0.00	16.67	13.89
Energy	27.41	15.56	33.33	60.00	50.00
Water and Effluents	15.74	17.59	39.44	33.33	68.52
Biodiversity	29.17	47.22	75.00	80.56	79.17
Emissions	8.47	10.05	44.31	54.37	66.93
Waste	22.96	16.67	36.30	18.15	56.67
Environmental Compliance	44.44	88.89	100.00	100.00	100.00
Supplier Environmental Compliance	27.78	33.33	61.11	33.33	37.04
Total Average	22.00	28.67	48.69	49.55	59.02

Referring to the results of the coding process of Pertamina's sustainability reports, there is a general increase in the quality of disclosure of environmental information from 2016 to 2020. In 2016, the company's CER disclosure scored 22%, which translates to a 'Poor' grade based on the grading system above. In 2020, however, the company's score had improved to 59.02%, which translates to an 'Adequate' grade. These results show that there was also an increase in the compliance level in Pertamina over the selected five-year timeframe.

Pertamina has the best overall score out of the five companies in the sample. The company notably produced a significant increase in the disclosure of Environmental Compliance, scoring 100% in 2018, 2019, and 2020. This is because the company disclosed the number and volume of oil spills, such as the one in YYA-1 ONWJ Block in 2019 (PT. Pertamina (Persero) 2019). The report also cited the efforts made by the company to clean up the oil spill. Another issue that Pertamina performed well in was its disclosures related to the biodiversity sub-topic in 2018 (75.00%), 2019 (80.56%), and 2020 (79.17%). In its

sustainability reports, the company cited the number of operational plants located near protected areas with at-risk or endangered species, the locations, names, and risk status of the endangered flora and fauna. The company also included tables listing all the endangered species in the areas situated near their working areas in the order of their risk status according to the IUCN Red List.

Furthermore, there was also a significant improvement in the disclosure of Materials from no disclosure in 2016 to 2018 (0.00%) to some disclosure in 2019 (16.67%) and 2020 (13.89%), albeit graded ‘Poor’. This is because, while previously Pertamina made no mentions of materials used in their production, in their 2019 and 2020 reports, they disclosed that the primary material used as raw material is hydrocarbon reserves, which are used up and cannot be recycled (PT. Pertamina (Persero) 2019; 2020).

While there is an overall upwards trend in the quality of CER disclosure of Pertamina, the researchers also observed inconsistencies in the quality of disclosure per sub-topic, meaning that the company disclosed some information that they then omitted in the next period for unknown reasons. Also, in some sub-topics such as Energy, Waste, and Supplier Environmental Compliance, there is still much room for the company to improve as of 2020. In general, Pertamina is graded ‘Adequate’ in 2020, which means the company has sufficiently met the minimum requirements provided by the GRI Standards.

Table 6

Compliance Analysis of ELSA

Sub-Topic	2016	2017	2018	2019	2020
Materials	22.22	41.67	55.56	55.56	55.56
Energy	21.85	14.07	12.22	12.22	12.22
Water and Effluents	20.56	31.48	33.89	33.89	33.89
Biodiversity	0.00	5.56	4.17	8.33	8.33
Emissions	3.18	9.52	1.98	2.38	1.85
Waste	11.85	22.22	58.15	58.15	58.15
Environmental Compliance	22.22	66.67	77.78	77.78	77.78
Supplier Environmental Compliance	0.00	27.78	33.33	33.33	33.33
Total Average	12.70	27.40	34.60	35.21	35.10

According to the results of the coding process, ELSA also experienced a general upward trend with the quality of the company's CER disclosure from 2016 to 2020. However, they only managed to get a 'Below Average' grade as of 2020 (35.10%). Nevertheless, the company saw a significant improvement in the quality of their CER disclosure since 2016 (12.70%) when it was 'Poor'. The increase in quality from 2016 to 2017 onwards can be attributed to the company starting to publish a sustainability report in 2017 onwards, instead of an annual report like in 2016.

ELSA did the best in the Environmental Compliance sub-topic, scoring 77.78% in 2018, 2019, and 2020. This sub-topic requires the company to disclose any non-compliance with environmental laws and regulations in the given period. If there are no acts of non-compliance, it is sufficient just to state so. The company also notably scored 58.15% for Waste in 2018, 2019, and 2020. ELSA included a table of the total waste of waste disposed of, separated into hazardous (B3) and non-hazardous waste. However, they failed to mention that their waste was diverted from disposal to be reused, recycled, or treated. The company also succeeded in explaining its waste management system.

Lastly, like Pertamina, there is also a significant improvement in the disclosure of materials from some disclosure in 2016 (22.22%) to 'Adequate' disclosure in 2018, 2019, and 2020 (55.56%). This increase in quality is due to the disclosure of the list of materials used and their total weight or amount, presented in a table, and also a justification that due to how chemicals and materials in operational activities are used up, there is nothing that can be reused or recycled by the company (PT. Elnusa Tbk. 2018; 2019; 2020).

Overall, ELSA was graded 'Below Average' as of 2020 (35.10%) 2020, which means that the company did not meet the GRI standards' minimum requirements and that their compliance level is relatively low. Similar to Pertamina, the researchers also observed inconsistencies in the scores of the sub-topics across the five years. There are sub-topics for which the company scored relatively poorly, such as Emissions, Biodiversity, and Energy, which pulled down the average grade of the company.

Table 7

Compliance Analysis of APEX, ESSA, and RUIS

Company Code	Sub-Topic	2016	2017	2018	2019	2020
APEX	Materials	0.00	0.00	0.00	0.00	0.00
	Energy	0.00	0.00	0.00	0.00	0.00
	Water and Effluents	0.00	0.00	0.00	0.00	0.00
	Biodiversity	8.33	8.33	0.00	0.00	0.00
	Emissions	0.00	0.00	0.00	0.00	0.00
	Waste	0.00	0.00	0.00	0.00	0.00
	Environmental Compliance	0.00	0.00	0.00	0.00	0.00
	Supplier Environmental Compliance	0.00	0.00	0.00	0.00	0.00
	Total Average	1.04	1.04	0.00	0.00	0.00
ESSA	Materials	0.00	0.00	0.00	0.00	0.00
	Energy	0.00	0.00	0.00	0.00	0.00
	Water and Effluents	0.00	0.00	0.00	0.00	0.00
	Biodiversity	0.00	0.00	4.17	4.17	4.17
	Emissions	0.00	0.00	0.00	0.00	0.00
	Waste	0.00	0.89	0.00	0.00	0.00
	Environmental Compliance	22.22	22.22	22.22	22.22	22.22
	Supplier Environmental Compliance	0.00	0.00	0.00	0.00	0.00
	Total Average	2.78	2.89	3.77	3.30	3.30
RUIS	Materials	0.00	0.00	0.00	0.00	0.00
	Energy	0.00	0.00	0.00	0.00	0.00
	Water and Effluents	1.67	0.00	0.00	0.00	0.00
	Biodiversity	0.00	0.00	0.00	0.00	0.00
	Emissions	0.00	0.00	0.00	0.00	0.00
	Waste	0.00	1.48	1.48	1.48	1.48
	Environmental Compliance	0.00	0.00	0.00	0.00	0.00
	Supplier Environmental Compliance	0.00	0.00	0.00	0.00	0.00
	Total Average	0.60	0.50	0.70	0.70	0.70

These three observed companies gained the lowest grades for the quality of their disclosures of environmental information. All three of

them, instead of sustainability reports, publish annual reports which included CSR sections in which they reported their CER activities and efforts during the period in question. Unlike sustainability reports, CER disclosure in annual reports is proven to be limited, as can be seen from these three companies' scores compared to Pertamina and ELSA.

In APEX's case, the Biodiversity sub-topic in 2016 and 2017 scored 8.33%. This can be attributed to the company's efforts in environmental conservation through the planting of mangroves along the Banten Bay coastline, Serang, Banten (PT. Apexindo Pratama Duta Tbk. 2016). Nine thousand trees were planted and maintained by the company as of 2016 (PT. Apexindo Pratama Duta Tbk. 2016).

Similarly, ESSA scored 4.17% for Biodiversity from 2018 to 2020. This is due to the company's efforts in the Maleo bird conservation program, one of the endemic birds in the lowland tropical forests of Sulawesi, such as Gorontalo and Central Sulawesi (PT. Surya Esa Perkasa Tbk. 2018). In addition, the company also reported no acts of non-compliance by disclosing that they were rewarded with the PROPER award from the Ministry of Environment and Forestry of the Republic of Indonesia with a rating of 'BLUE' as a form of responsibility and participation concerning the environment (PT. Surya Esa Perkasa Tbk. 2017), thus earning the company a score of 22.22% for Environmental Compliance.

Lastly, RUIS scored 1.67% in Water and Effluents in 2016 from their descriptions of their wastewater management, and 1.48% for Waste from 2017 to 2020 from their efforts in waste management by sorting organic and inorganic waste.

Overall, these three companies scored very poorly and received the grade 'Poor' in terms of their level of quality of CER disclosure as of 2020, with APEX scoring 0.00%, ESSA 3.30%, and RUIS 0.70%. This means that these three companies do not report their environmental disclosure according to the GRI standards' requirements and that their compliance level is thus deficient. The researchers also observed that most of the CSR reporting by these three companies focused on disclosing their efforts in contributing to the community, such as through the conservation efforts carried out by APEX and ESSA mentioned previously, instead of reporting the impacts of their day-to-

day operations on the environment and subsequent efforts to mitigate such impacts, like in the case of Pertamina and ELSA.

DISCUSSION

All in all, the results show that the quality of disclosure of environmental information by the Indonesian oil and gas companies is still relatively low, suggesting a generally low level of compliance with the guidelines provided by the GRI Standards. Several of the sub-topics were even barely expanded on by the companies in their annual or sustainability reports. A summary of the companies' scores and grades is shown in Table 8 below.

Table 8

Summary of Research Findings

Company Code	2016	2017	2018	2019	2020	Total Average	Overall Grade
Pertamina	22.00	28.67	48.69	49.55	59.02	41.59	Below Average
APEX	1.04	1.04	0.00	0.00	0.00	0.42	Poor
ELSA	12.70	27.40	34.60	35.21	35.10	29.00	Poor
ESSA	2.78	2.89	3.77	3.30	3.30	3.21	Poor
RUIS	0.60	0.50	0.70	0.70	0.70	0.64	Poor

As shown in Table 8, the quality of disclosure of CER information in Indonesia's oil and gas sector is still low, despite the mandate to report environmental information by the government. This demonstrates that the environmental reporting practices in Indonesia are still primarily voluntary. Despite the low grades across the sample, it can be seen that Pertamina and ELSA have the highest scores among the selected companies. This can be largely attributed to the fact that they disclose their CER reporting in sustainability reports instead of annual reports like the other three companies because they coincidentally are the only two who publish sustainability reports out of the five. Moreover, ELSA saw an increase in the quality of their CER reporting from 2016 to 2017 and thereafter as they changed reporting methods from using annual reports to the sustainability reports in 2017. In addition, the fact that Pertamina is an SOE can also contribute to it being the highest scorer in the sample. SOE by definition is a company whereby

the state owns all or majority of its capital through direct participation originating from state assets (Avianti 2006). Pertamina as an SOE is a direct representation of Indonesia as a state, which most likely motivates the company to put more effort into its reporting.

In answer to the research questions, the results have shown that Indonesia's oil and gas companies do not fulfill their CER. This is because the grades in Table 8 indicate that the compliance levels of the oil and gas companies in Indonesia are relatively low according to the GRI Standards, which were used as the guidelines. The companies have a low quality of CER disclosure and thus a low level of compliance with the guidelines set by the GRI Standards. These results are similar to those from oil and gas companies operating in Brazil where there is lack of adherence to GRI guidelines, thus the regulator needs to establish a system that is more resolvable and capable in measuring the sustainability performance of oil and gas companies (Gaudencio et al., 2020). A study by Alazzani and Wan-Hussin (2013) on Malaysian oil and gas companies yielded similar results showing that five of eight companies disclosed reports that followed the GRI guidelines and they obtained third-party assurance.

These results, which fill an existing gap in the previous studies, serve to shine a light on the environmental reporting practices in the Indonesian oil and gas industry. The research findings contribute to the CER literature in Indonesia that currently demonstrates—even post-PP 47/2012 which had aimed to improve the standard of compliance in environmental reporting—that companies in the oil and gas industry fail to disclose CER reports that are of good quality as standardized by the GRI Standards. It can therefore be assumed that the environmental strategies implemented by the Indonesian government still present loopholes for oil and gas companies, and thus do not serve their purpose. At the same time, this study also contributes findings that support the existing literature on CER reporting which has shown that the information disclosed is lacking in quality and is incomplete (Adams 2004; Rusmanto and Williams 2015; Hąbek and Wolniak 2016; Faisal, Napitupulu, and Chariri 2019), and that the reporting practices are merely tools to placate stakeholders and that legitimacy theory is used as a justification for such conformity (Basalamah and Jermias 2005; O'Dwyer, Owen, and Unerman 2011; Cho et al. 2012; Duker and Olugunna 2014).

CONCLUSION AND IMPLICATION

CER reporting has been a way for the public to hold companies accountable for their actions that impact the environment (Feronika, Silva, and Raharjo 2020). The purpose of implementing CER is to contribute to sustainable development (ISO 26000 2010). CER activities are critical for the company, especially in building relationships and trust and demonstrating the company's goodwill (Gunawan 2018). Consumers, investors, and the larger community in which the business entity operates all have vested interests in monitoring and evaluating CER actions. The need for transparent and accountable organizational governance is growing, emphasizing environmental reporting's importance (Faisal, Napitupulu, and Chariri 2019).

This study aimed to analyze whether the companies in the Indonesian oil and gas industry—an industry that is naturally sensitive to the environment—fulfill their CER by disclosing environmental information and to analyze the level of compliance showcased by those companies in their environmental reporting as per the GRI Standards. Using the content analysis method of relevant documents, this study assigned grades to the selected companies to determine their compliance level in terms of the GRI Standards. The findings show that the companies do not fulfill their CER as their scores indicate a low quality of environmental disclosure and low compliance with the GRI Standards.

While the regulation of CER in oil and gas companies in Indonesia is stipulated under PP 47/2012 and Law No.40 of 2007—whereby companies must be committed to participating in sustainable economic development to improve the quality of life and the environment in a way that benefits the company and the community at large (Government of Indonesia 2007; Hendro S. and Naryoso 2018)—the practice of CER and even CSR reporting, in general, is still largely voluntary in Indonesia, as can be seen from the research findings. The voluntarism aspect of this practice is also justified by the Indonesian government's lack of clear standardized guidelines. If the government were to implement mandatory standardized guidelines properly, such as the guidelines provided by the GRI Standards, the results of this research might have been vastly different.

This study also faced many limitations. It only used documents published by the selected companies, which are limited to the CER reports in the annual and sustainability reports. Since, to begin with, three out of the five companies use annual reports, there is minimal environmental information to analyze. The content analysis techniques assume that the report provider's information is implemented. Hence, the validity of the information becomes something that cannot be controlled in this study. Further research would be expected to directly compare the disclosure of the information to its realization in the field. This needs to be done considering the low quality of disclosure of CSR information, which can be triggered by irresponsible corporate behavior in the realization of social responsibility programs.

Moreover, since this study used purposive sampling under the assumption that it was representative of the population, there is a limitation in the type of companies that populated the sample. They are all publicly listed on the IDX and one is an SOE, whereas there are other types of companies in the Indonesian oil and gas industry such as MNCs, SMEs, and private companies, and the conditions upon which this research was based may not be consistent for those companies. For instance, further research is required to corroborate that the GRI Standards are appropriate and applicable to them, considering also the environmental laws and regulations for such types of companies that may be different from the ones that were used in this research.

Based on the results of this study—which found that several issues had very low levels of disclosure by the companies, such as Supplier Environmental Compliance—future research could explore these issues more deeply considering that they are also part of the reporting guidelines of GRI Standards. There is also room for further research where companies use other media to report CER activities other than CSR reports in annual reports or sustainability reports, such as booklets, corporate magazines, or other materials on the company's website. By being flexible about the use of other media besides CSR reports in the annual and sustainability reports, the information obtained could be more diversified.

In conclusion—bearing in mind that this study used a content analysis method that only focused on the information disclosed in documents—companies need to improve the quality of their disclosure of CER information by clearly disclosing environmental

impacts, CER activities, and continuous evaluation of these activities. In addition, companies need to provide information related to matters that are rarely disclosed by companies to increase transparency and accountability. Policymakers also need to start making regulations related to CER reporting by requiring standardized guidelines that companies in Indonesia can apply, and by making compliance with GRI Standards mandatory.

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