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GRI-BASED SUSTAINABILITY REPORTING IN THE EUROPEAN UNION ENERGY SECTOR: A COMPREHENSIVE OVERVIEW

Abstract:

This paper provides an analysis of sustainability reporting practices in the European Union, focusing on indicators disclosed by energy companies in accordance with the Global Reporting Initiative (GRI) guidelines and standards. By analyzing data from sustainability reports of energy companies between 2016 and 2019, the paper investigates the evolution of indicator disclosure over time. The findings reveal that economic indicators have been consistently reported without significant fluctuations, while environmental indicators show a slight decline since 2017, albeit without major deviations. On the other hand, social indicators demonstrate a positive trend throughout the entire period, particularly when compared to the lowest disclosure rate in 2016. The analysis highlights the voluntary nature of GRI standards' application and the limited disclosure of economic indicators by companies. It underscores the need to include economic indicators in sustainability reports to ensure a comprehensive representation of all three dimensions of sustainability. Furthermore, the study suggests narrowing down GRI standards as many indicators are underutilized in the analyzed companies. While the development of sustainability reporting standards for EU companies is underway, global comparability remains a challenge. Therefore, the paper envisions the future development of a global sustainability reporting framework, akin to financial reporting, to enhance organizations' assessment, comparability, and improvement of sustainability performance. In this regard, the GRI framework, based on its current application, holds potential for further refinement and formalization. Ultimately, achieving adequate standardization and harmonization will be crucial in advancing the field of sustainability reporting. This is particulary important for investors interested in making informed decisions based on environmental, social, and governance (ESG) factors.

Keywords:

Sustainability reporting, GRI standards, Energy companies, Sustainable investment

JEL Classification: M48, Q56, Q49

1 Introduction

The most comprehensive approach to integrating sustainability into business is the Triple Bottom Line (TBL) model, popularized by John Elkington (1997). This model is focused on sustainability by incorporating economic, social, and environmental dimensions into the business process to measure the sustainability of operations. In fact, it is an expanded version of the traditional accounting model, where in addition to economic considerations, social and environmental impacts of business are taken into account. Consequently, TBL becomes synonymous with corporate sustainability, and a comprehensive understanding of sustainable business based on environmental, social, and governance (ESG) factors becomes a concept of great importance to investors when making investment decisions.

To establish reporting guidelines for the Triple Bottom Line (TBL) dimensions, the Global Reporting Initiative (GRI) was founded, initially focusing on integrating the environmental dimension into corporate reporting. This marked a significant shift in accounting practices from environmental accounting to sustainability accounting, with the year 1998 being recognized as a milestone. The standardization period witnessed the institutionalization and development of sustainability reporting frameworks, prominently exemplified by the establishment and evolution of GRI and its sustainability reporting standards (Gokten, Ozerhan, and Okan Gokten, 2020: 103-111). The post-standardization period, starting in 2016, encompasses both voluntary and mandatory sustainability reporting, particularly for specific EU companies. In fact, the European Union is the most active region globally in terms of sustainability reporting (GRI, 2013).

Under EU regulations, laws, and directives, the development and improvement of sustainability reporting, particularly its harmonization across European countries, is promoted. The Directive governing non-financial reporting (sustainability reporting) is EU Directive 2014/95. Since 2017, this Directive has mandated that large EU companies with over 500 employees disclose non-financial information, including aspects related to sustainable business, in their reports for the fiscal year 2017. As of January 5, 2023, the Corporate Sustainability Reporting Directive (Directive (EU) 2022/2464) was implemented, replacing Directive 2014/95/EU. This updated directive extends reporting obligations to include all large companies and listed companies (excluding micro-enterprises). Additionally, it introduces requirements for the review and verification of reported information, along with more comprehensive reporting standards.

The Global Reporting Initiative (GRI) plays a significant role in advancing sustainability reporting within the EU and actively contributes to the ongoing improvement of the EU Directive. GRI standards are widely accepted as the most comprehensive standards for sustainability reporting worldwide (Mancini and Sala, 2018; Biondi, Dumay, and Monciardini, 2020, etc.). On the other hand, Higgins, Stubbs, and Milne (2018) examined companies that do not produce sustainability reports and found that all companies were aware of the existence of GRI standards. This highlights the recognition of GRI standards among potential sustainability reporters.

Energy companies in the EU are under pressure from regulatory bodies, stakeholders, and the public to align their business operations with sustainable development. Energy companies play a

crucial role as producers and distributors of energy, which is essential for society as a whole and industrial development (VVA consulting, Copenhagen Economics, Neon & Deloitte, 2018). By analyzing the content of sustainability reports from 2016 to 2019, data was gathered on the representation of GRI indicators in sustainability reports of the largest energy companies in the EU, which are leading the EU's energy sector.

The rest of the paper is structured as follows. After the introduction, the second chapter describes the conceptual framework of GRI guidelines and standards, along with their main advantages and disadvantages. The third chapter outlines the methodology applied in this study. The fourth chapter presents the research findings on the representation and evolution of GRI indicators disclosure in sustainability reports of EU energy companies. Finally, the paper concludes with the last chapter.

2 GRI guidelines and standards

2.1 Conceptual Framework of Guidelines and Standards

The development of GRI Guidelines began three years after the establishment of GRI, in 2000. The first version of the GRI Guidelines was published in 2000, representing the first global framework for sustainability reporting. In the period leading up to 2013, four versions of the guidelines were released. In 2015, the Sustainable Development Goals (SDGs) were adopted, and in 2016, sustainability reporting standards were published based on these goals. These standards became the first global standards for sustainability reporting. The standards differ from the previous edition (GRI G4 Guidelines) in terms of clearer requirements, a more flexible structure, and increased transparency. In addition to the new standards, in 2019, the Sector Program was introduced, where GRI guidelines are tailored to specific sectors based on their characteristics. The standards continue to evolve in different dimensions of sustainability through the adoption of new standards or the enhancement of existing ones.

GRI standards are designed to enable reporters to disclose the impacts of their company on the environment, society, and the economy. They are structurally divided into two sets: general and specific standards. The first group consists of the General Standards (Series 100), which are applicable to every company preparing sustainability reports. There are three standards within this series (GRI 101, GRI 102, GRI 103). Each series of standards includes a set of specific standards, except for GRI 101, which contains reporting principles. Regarding the specific standards, the economic standards form Series 200, environmental standards form Series 300, and social standards form Series 400.

The economic dimension of sustainability pertains to the economic impacts of an organization on its stakeholders, as well as local, national, and global economic systems. Economic standards are classified into six categories (GRI 201 - GRI 207), which encompass 13 individual standards (indicators) that track the main economic effects of the organization and the flow of capital between different stakeholders. All economic standards have been in effect since July 1, 2018, except for GRI 207 Tax, which has been applied since January 1, 2021.

The environmental dimension of sustainability is covered by the environmental standards, which are divided into eight categories (GRI 301 - GRI 308), comprising 35 individual standards. The environmental dimension encompasses all the impacts of an organization on the environment, including living and non-living natural systems such as water, air, land, and ecosystems (GRI, 2023).

Social standards are categorized through 19 categories (GRI 401 - GRI 419) and include a total of 44 standards. Compared to the economic and environmental standards, they represent the most extensive categorization and list of standards. These standards address the people connected to the company, such as employees, suppliers, customers, and human relationships in general.

2.2 A comprehensive review of Strengths and Weaknesses of GRI Guidelines and Standards

The absence of a universally accepted and standardized framework for sustainability reporting, similar to financial reporting, creates a significant challenge. While the GRI standards provide a comprehensive and detailed structure, companies tend to selectively report on GRI indicators that are pertinent to their operations. As a result, there exists a disparity in the representation of all sustainability dimensions, impeding the assessment of sustainability reporting. This variation in reporting practices poses challenges in evaluating the performance of organizations in sustainable business practices.

The widespread adoption of GRI standards in sustainability reporting is unquestionable, as the majority of sustainability reports are based on them. This can be attributed to several advantages that GRI standards offer to sustainability reporters. These advantages arise from the distinctive characteristics of GRI standards, which differentiate them from other guidelines and contribute to their significant presence in sustainability reporting. One key advantage is the comprehensive conceptual framework of the standards, which is continuously updated and improved. Additionally, GRI standards can be applied by organizations of any size, allowing for meaningful comparisons across a large number of sustainability reports. Another advantage is the accessibility of the standards, which are available on the GRI website in multiple languages. Flexibility in application is also a significant advantage. GRI standards do not impose strict limitations on their implementation, enabling organizations to utilize all standards or selectively choose specific ones to report on particular sustainability information. Overall, these advantages contribute to the prominence of GRI standards in sustainability reporting, ensuring their widespread utilization and the reliable disclosure of sustainability-related information.

Flexibility enables the adaptation of GRI standards to reporting situations, while the advantage of specific standards lies in their applicability to the specificities of certain sectors. According to del Mar Alonso-Almeida, Llach, and Marimon (2014), this advantage emphasizes sector-specific content, improves sustainability within sector organizations, and enhances the quantity and quality of GRI reports in those sectors. Transparency and voluntariness of the reporting

framework are highlighted by Antoni and Hurt (2006) as particular advantages of GRI standards. One of the significant benefits is that preparing reports based on GRI standards provides a comprehensive picture of an organization's material topics, their related impacts, and how these impacts are managed. Fonseca (2010) emphasizes the undeniable benefits of the GRI framework, including providing a platform for dialogue with companies and promoting disclosures that can be used for various purposes, such as academic research and ethical investments. The author also notes that the GRI framework can serve as a tool for gaining competitive advantage and managing corporate reputation. According to Herzig and Schaltegger (2006), reporting on successful integration of social and environmental activities, which are considered part of the core business activities of a company, can enhance its reputation. Yang et al. (2021) state that adopting GRI standards in sustainability reporting reduces information asymmetry and fosters close connections with various stakeholders. Another advantage they highlight is that managers can expect long-term benefits, including improved financial performance, through the consistent application of GRI standards, which are applicable to all organizations.

Despite the advantages and the fact that GRI standards are widely adopted, they do have certain limitations. One of the challenges highlighted by Domingues et al. (2017) is the difficulty in selecting and adapting indicators within the GRI standards, as these indicators are primarily designed for companies driven by profit motives. Furthermore, a drawback is the absence of comprehensive sustainability training within the GRI framework, assuming either prior knowledge of sustainability reporting or recognizing that the concept of sustainability can vary among different organizations. Similarly, Milne and Gray (2013) argue that the GRI framework is partial in nature, as the extensive range of indicators presents challenges in terms of indicator selection and the demanding nature of disclosure requirements, leading to reluctant disclosure by companies. Consequently, comparability of disclosed information is compromised. Dingwerth and Eichinger (2010) emphasize that despite the guidelines and principles provided within the standards, there can still be significant variation in sustainability reporting practices among companies. This divergence arises from the fact that companies report on different indicators due to their varying social and environmental priorities.

Another limitation, as identified by Milne and Gray (2013), is the lack of coherence within the GRI framework, specifically the absence of a theory that guides indicator selection and ensures their interrelatedness. This same drawback of fragmented assessment is mentioned by Virgone et al. (2018), who point out the neglect of synergies among sustainability dimensions. They also highlight the lack of geographical or spatial focus, as reports are submitted at the organizational level. This can lead to an invalid and inaccurate assessment of sustainability performance, as location-specific disclosures are disregarded. When considering the representation of individual standards within each sustainability dimension, it is evident that social dimension standards predominate (comprising almost 45% of all standards). This represents a limitation as it disrupts an integrated view of business sustainability and creates a certain imbalance. Laskar and Maji (2016) identify the limitation of standards in terms of report verification. The same authors point out that limited stakeholder participation, lack of transparency, and comparable criteria are among the issues associated with external verification and assurance of sustainability reports. These limitations highlight the need for standardization in sustainability reporting.

The advantages of the GRI framework outweigh its limitations, and efforts are made to mitigate these limitations through regular updates. By examining these limitations, it can be concluded that they could be largely neutralized by transforming the GRI framework from voluntary to mandatory, along with the establishment of appropriate legal regulations.

3 Methodology

The study focused on a sample of European energy companies (N = 28) that are primarily involved in generating, transmitting, and distributing electricity. These companies hold the highest market share in their respective countries and have published sustainability reports online. The reports were based on the Global Reporting Initiative (GRI) standards and were written in English between 2016 and 2019.

The selection of companies was based on a list of energy companies derived from the 2018 *Study on the quality of electricity market data of transmission system operators, electricity supply disruptions, and their impact on the European electricity markets* conducted by the European Commission. However, since the study only covered data up to 2016, this paper took into account subsequent changes that occurred, namely: 1) Electrabel becoming a subsidiary of Engie, 2) Esset becoming part of Innogy, which was acquired by E.ON in September 2019, 3) Lietuvos Energijos Gamyba becoming Ignitis Gamyba in September 2019 and becoming part of Ignitis group, and 4) Ørsted changing its name from Dong Energy in November 2017. It is important to note these changes as only parent companies in their consolidated reports are obligated to report on sustainability if they are part of a group of companies, as specified by Directive 2014/95/EU.

Certain companies were excluded from the sample for various reasons. Electrocentrale Bucharest was excluded because its website was not available in English. EAD - Natsionalna Elektricheska Kompania, EAC - Electricity Authority of Cyprus, and Enemalta PLC were excluded because they did not publish sustainability reports online. Ørsted, Electrabel (Engie subsidiary), Eesti Energia AS, EDF, Ignitis group, Slovenské elektrárne, HSE - Holding Slovenske Elektrane, and Enovos (part of Encevo) were excluded because they did not publish sustainability reports according to GRI standards or had inconsistent reporting practices according to GRI standards. Consequently, the final sample consisted of 16 European energy companies (Appendix 1), and their 64 sustainability reports.

The analysis of reports that followed the GRI standards was conducted using content analysis, which is a widely employed approach for examining corporate sustainability and sustainability reporting (see Landrum and Ohsowski, 2018). The content analysis of sustainability reports has gathered data on sustainability indicators that each company publishes in their sustainability reports. These indicators align with the GRI standards and encompass the economic, environmental, and social dimensions of sustainability. The analysis aims to determine the extent to which each GRI indicator is represented in the sustainability reports of companies.

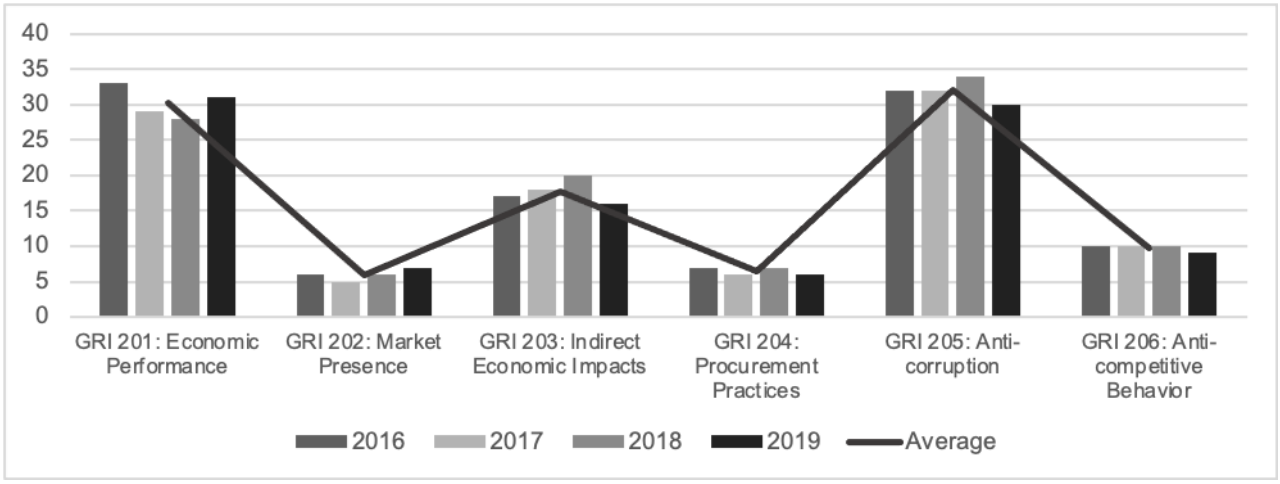
A total of 92 sustainability indicators were analyzed (13 economic, 35 environmental, 44 social). To enable the analysis of sustainability reports in the period from 2016 to 2019, GRI Guidelines 4

have been transformed into GRI Standards, with the aim of enabling the comparison of sustainability indicators from 2016 with sustainability indicators from 2017, 2018 and 2019. The conversion of GRI Guidelines 4 to GRI Standards was undertaken by GRI (2017), which undertook the conversion in Mapping G4 to GRI Standards.

4 Adoption of GRI Standards in Sustainability Reports of Energy Companies

In order to gain insight into the evolution of indicators disclosure over the years, they have been analyzed through the GRI standard categories (Figure 1, 2, and 3). The reason for using the standard categories is that they group standards with similar characteristics under a common indicator. This is useful for analysis as the GRI standards are extensive. Analyzing the reports over the years provides insight into the reporting trends before and after the introduction of mandatory sustainability reporting legislation for large companies in the EU. Figure 1 illustrates the evolution of reporting on Economic Indicator Categories in EU energy companies in the period 2016-2019.

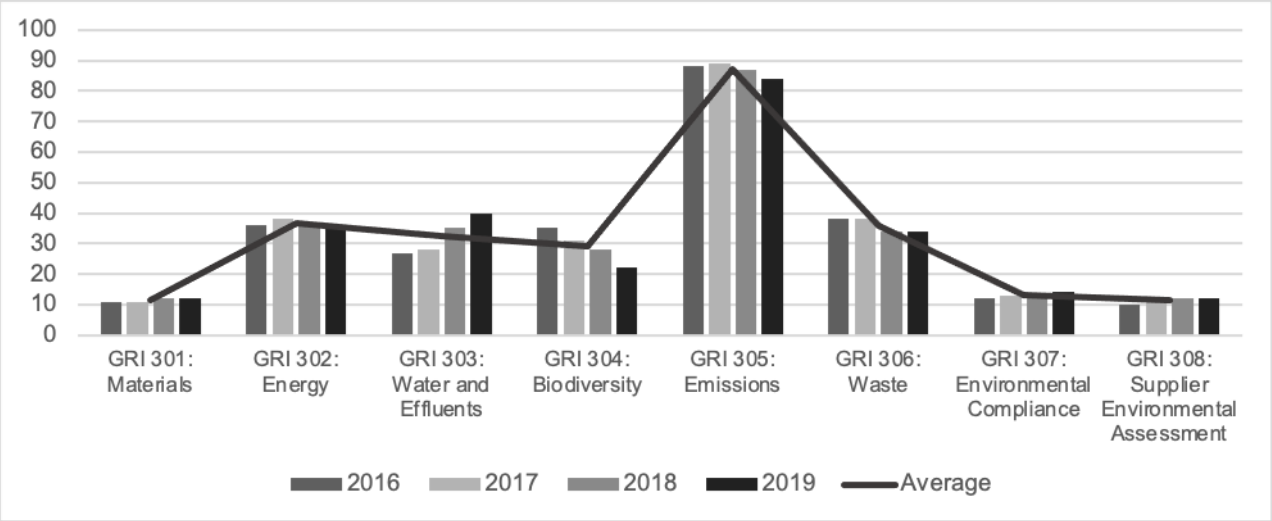
Figure 1: Analysis of Economic Indicator Categories During the Observed Period



Source:Authors' work

Energy companies report the least on market presence, procurement practices, and anti-competitive behavior. The leading categories in reporting are GRI 201: Economic Performance, GRI 203: Indirect Economic Impacts, and GRI 205: Anti-corruption. The highest level of reporting on economic indicators was observed in 2016 and 2018, suggesting a lack of continuity in reporting on economic sustainability indicators. Figure 2 illustrates the trends of reported environmental indicator categories during the observed period.

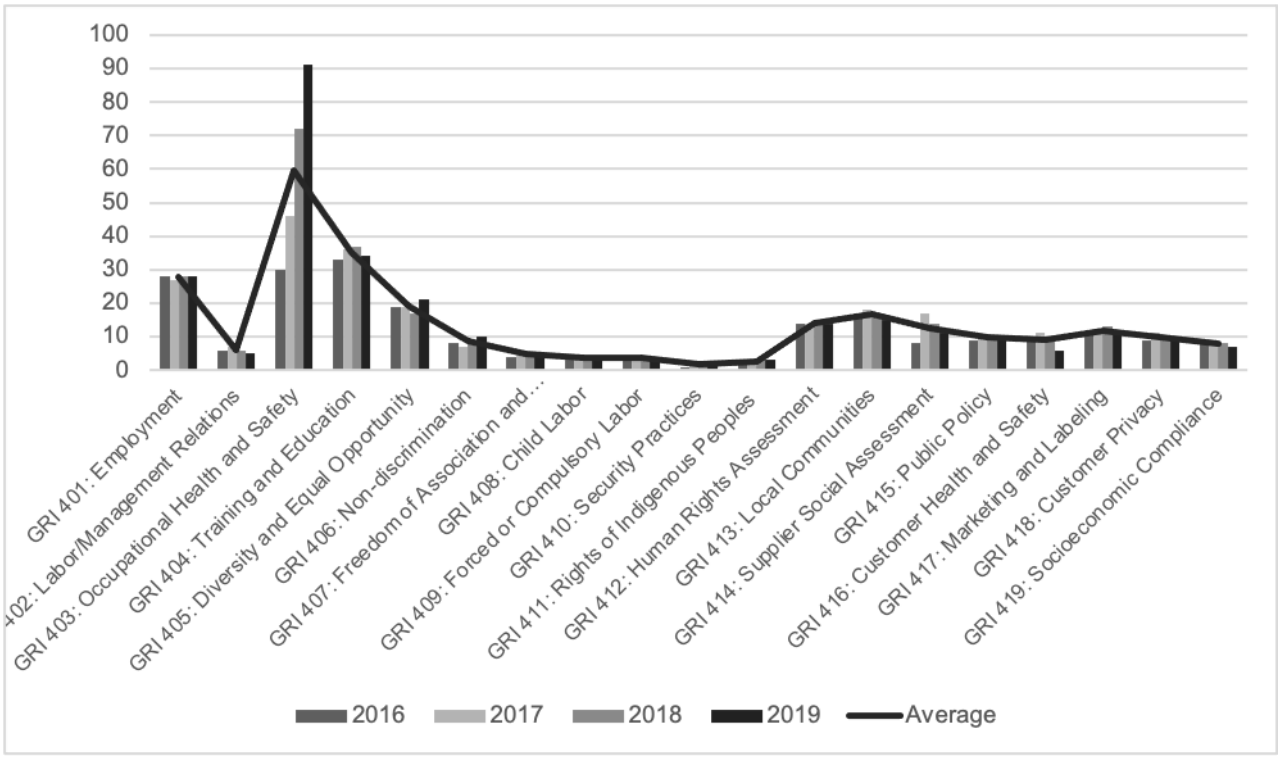
Figure 2: Analysis of Environmental Indicator Categories During the Observed Period



Source: Authors' work

The category GRI 305: Emissions stands out in terms of environmental indicators, with the highest level of reporting throughout the period. The indicators in the GRI 303: Water and Effluents category show a tendency of continuous increase over the years, while the indicators in the GRI 304: Biodiversity category demonstrate a trend of constant decrease. The reporting on the GRI 301: Materials category shows stagnation over the period. The highest level of reporting on environmental indicators was observed in 2017 and 2019. Figure 3 displays the trends of reported categories of social indicators.

Figure 3: Analysis of Social Indicator Categories During the Observed Period

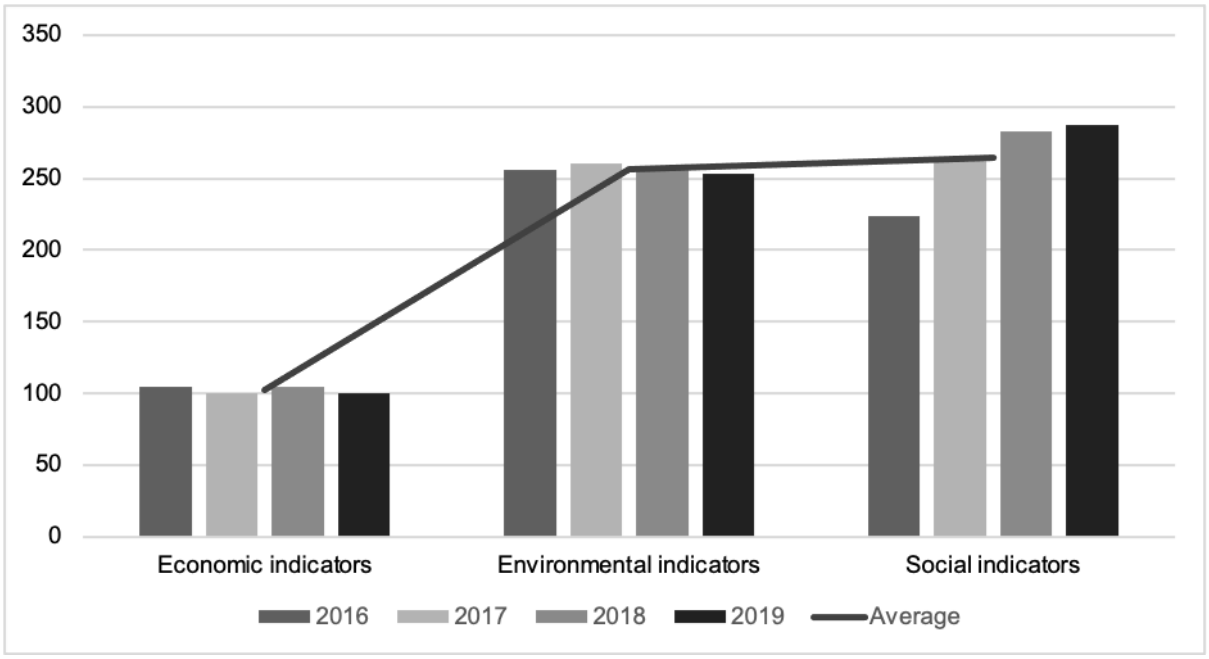


Source: Authors' work

Overall, in comparison to other indicators, reporting on social indicators is average or below average. The categories with the highest level of reporting include GRI 401: Employment, GRI 403: Occupational Health and Safety, GRI 404: Training and Education, and GRI 405: Diversity and Equal Opportunity. Among these categories, indicators in the GRI 403 category show a significant increase over the years. When examining the categories over time, it is evident that the highest level of reporting occurred in 2019.

Based on the analyzed indicator categories, it can be concluded that 2018 and 2019 were the years with the highest level of reporting on sustainability indicators (Figure 4).

Figure 4: Representation of Indicator Categories During the Observed Period



Source: Authors' work

The analysis reveals that economic indicators show no significant changes over the years and are reported on average without significant fluctuations in the reporting of indicators. Environmental indicators have a slight decreasing trend in the reported indicators since 2017, but there are no major deviations during the period. On the other hand, social indicators show a growing trend throughout the period. This is particularly evident when comparing it to 2016, where the number of reported indicators was at its lowest level. The lower number of indicators in 2016 indicates that GRI social performance indicators have progressed over the years in terms of changes and improvements, and that companies have embraced them. As for economic and environmental standards, there are no significant changes during the transition from GRI guidelines to GRI standards, nor in the periods before and after the introduction of legal requirements for sustainability reporting.

5 Conclusion

The Global Reporting Initiative (GRI) standards are the most recognized and widely used standards for organizational sustainability reporting (KPMG, 2020; Mancini and Sala, 2018; Orazalin and Mahmood, 2019). These standards provide companies with a reliable and consistent framework for compiling sustainability reports. The GRI standards are universal, applicable to all types of organizations, and enable them to showcase their sustainability impacts. They are also valuable to other stakeholders for whom the sustainability performance of companies is important, such as investors, policymakers, and others. This facilitates global comparability of corporate sustainability practices, with significant emphasis on measuring sustainable business performance based on sustainability reports.

Despite their popularity and global recognition, GRI standards are not fully implemented in practice, particularly among energy companies. Although well-designed with detailed reporting guidelines and regular updates to accommodate changes, energy companies fall short in effectively applying these standards when preparing their reports. The lack of published GRI indicators in company reports indicates their comprehensiveness and excessive level of detail, as well as a voluntary approach to implementation. The voluntary nature of GRI standards highlights the absence of mandatory adoption at the EU level. While sustainability reporting is mandatory, there is no prescribed reporting methodology.

Sustainability reporting, despite being a legal requirement for large companies in the EU, including major energy companies, is still in a developmental phase. Although companies base their sustainability reports on GRI standards, they do not fully implement them. This means that companies arbitrarily choose the sustainability indicators to include in their reports. In cases where certain indicators are not included, the reasons for their omission are not stated. Some companies briefly mention that a particular indicator is not applicable, but fail to provide an explanation for its exclusion. Among all sustainability indicators, economic indicators are the least disclosed by companies. They often provide a reference to review the annual financial reports without specifying the exact page number or item to examine, making it challenging to gain insights and draw specific conclusions about the economic performance indicators.

Based on the disclosed indicators in sustainability reports, it is recommended to include economic indicators in sustainability reporting to ensure the representation of all three dimensions of sustainability and to achieve a comprehensive sustainability report. The analysis of report contents indicates that both the GRI standards and the existing legal obligations are insufficient, as certain companies do not prioritize reporting practices that consolidate information and provide more detailed insights. Therefore, it is recommended to streamline the GRI standards, as most indicators are not disclosed by the analyzed companies. While GRI standards do have specific guidelines for different industries, there is a need for universal standards that companies can apply when preparing their sustainability reports.

The issue of comparability of sustainability reports at the EU level is expected to be addressed through the development of sustainability reporting standards specifically tailored for EU companies, which are currently under development. While this solution addresses the EU context, the challenge of global comparability still remains. Given that sustainability is a global concern, it is anticipated that a global framework for sustainability reporting, similar to financial reporting, will be developed in the future to create a comprehensive framework that can assist organizations in assessing, comparing, and enhancing their sustainability performance. In this context, based on its previous application, the GRI framework has the potential for further development and formalization. Therefore, it can be concluded that the evolution of sustainability reporting will continue until an adequate level of standardization and harmonization is achieved.

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Appendix 1: Sample Companies

Company	**Country**
Verbund	Austria
HEP – Hrvatska elektroprivreda	Croatia
ČEZ	Czech Republic
Fortum	Finland
E.ON	Germany
PPC SA – The Public Power Corporation S.A.	Greece
MVM Hungarian Electricity	Hungary
ESB - Electricity Supply Board	Ireland
ENEL	Italy
Latvenergo AS	Latvia
Innogy	Netherlands
PGE – Polska Grupa Energetyczna S.A.	Poland
EDP – Energias de Portugal	Portugal
Endesa	Spain
Vattenfall	Sweden
SSE – Scottish and southern energy	United Kingdom