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Analysis of the Related Financial Reporting of Electric Utility Companies on Energy Transition Readiness: PLN BUMN and non-PLN

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Abstract

This study analyzes the relevance of financial reports to energy transition and sustainability in electric utility companies, specifically in PLN and Non-PLN state-owned enterprises. The focus of this research is on how fixed asset financial data in the statement of financial position reflects the risks of energy transition and how electric utility companies literate financial reports through disclosure of energy transition and sustainability information. This study uses descriptive analysis with financial report data from four electric utility entities over a three-year reporting period. The results show that financial reports of electric utility companies, both PLN and Non-PLN state-owned enterprises, have not fully reflected information related to energy transition and sustainability, with findings that the coefficient of variation of fixed assets reaches 151.76% to 265.78%, indicating a high level of data dispersion. However, statistical and graphical analysis shows a link between fixed asset financial data and the risks of energy transition and its impact on sustainability. This study concludes that electric utility companies, both PLN and Non-PLN state-owned enterprises, need to improve the relevance of their financial reports by presenting information related to energy transition and sustainability in a more transparent and comprehensive manner. This study is expected to contribute to the development of more relevant and comprehensive financial reporting in the context of energy transition and sustainability.

Keywords
Energy Transition, Financial Reporting, Electricity Utility, Risk Disclosure, Sustainability.

1. Introduction
The issue of climate change continues to be a pressing concern. Climate change has prompted corporations to disclose their policies and actions in almost all aspects. Organizations and management have made climate change a recurring topic on corporate agendas. Meanwhile, the need for relevant information related to energy transition and climate change in financial reports is still considered insufficient. Financial reports are standalone and mandatory for corporations. The justification for the need for relevance is based on the fact that the disclosure pillar (disclosure in the notes to the financial statements) is still at the level of detailing specific amounts or numbers and providing explanations regarding the application of accounting policies. So far, alternatives that can be done to expand disclosure, both in terms of relevance and interconnectedness, are through integrated reporting or supplementary reporting, referring to a standard. Furthermore, the IFRS has issued IFRS Sustainability Disclosure Standards, consisting of two standards. These standards are IFRS S1, General Requirements for Disclosure of Sustainability-related Financial Information, and IFRS S2, Climate-related Disclosures. The role of these two standards is aimed at promoting disclosure related to sustainability and climate that has a connection with IFRS

financial accounting standards. Their application is in the financial reporting process, where financial statements are the output. IFRS S1 clearly emphasizes sustainability by requiring an entity to disclose information about all risks and opportunities related to sustainability that can reasonably be expected to affect the entity's cash flows, access to financing, or cost of capital in the short, medium, or long term. For the purpose of this standard, these risks and opportunities are collectively referred to as 'sustainability-related risks and opportunities that can reasonably be expected to affect the entity's prospects' (International Sustainability Standards Board, 2023). Meanwhile, IFRS S2 emphasizes climate-related disclosures, stating that the objective is to enable users of general-purpose financial reports to understand the governance processes, controls, and procedures used by an entity to monitor, manage, and oversee climate-related risks and opportunities (International Sustainability Standards Board, 2023).

Climate change caused by carbon emissions involves corporations in the process. Electricity generated by PT Perusahaan Listrik Negara (Persero) or PLN, from coal-fired power plants, has an impact in the form of carbon emissions. The number of coal-fired power plants operated by PLN in 2024 was 146 units, compared to 135 units in 2023, indicating an increase. Therefore, efforts to reduce carbon emissions from coal combustion in power plants operated by PLN are becoming urgent. The role of financial reporting in presenting and disclosing financial information related to climate change relevance is often questioned. The conceptual framework for financial reporting (IFRS) emphasizes the principle of relevance as a fundamental qualitative characteristic. The predictive value and confirmatory value of financial information are interrelated. Information that has predictive value often also has confirmatory value. For example, revenue information for the current year, which can be used as a basis for predicting revenue in future years, can also be compared with revenue predictions for the current year made in previous years. The comparison results can help users correct and improve the process used to make previous predictions (Collis et al., 2012).

On the other hand, corporations that produce carbon emissions are responsible for financial literacy as an effort to open up information to the public about the efforts they are making in the context of climate change. Climate knowledge and awareness affect our capacity for effective mitigation and adaptation to climate change (Tapun, 2025). Dino Patti Djalal, former Deputy Minister of Foreign Affairs of the Republic of Indonesia and founder of the Foreign Policy Community of Indonesia (FPCI), revealed that our narrative on climate change is still very weak, while public literacy is also still very weak, and government attention is also still very weak (Chandra, 2021).

As a provider of electricity utilities (holding a license for electricity supply business) based on the Electricity Law No. 30 of 2009, PLN is in a position to operate power plants to produce energy in the form of electricity. Power plants and their main and supporting infrastructure are vital assets for PLN, as these assets enable the benefits of electricity to be felt. PLN is not immune to the issue and phenomenon of climate change. Implementing an energy transition by operating power plants using new and renewable energy sources is a mandate that must be carried out by PLN, as it is stipulated in the RUPTL 2025-2035. Stakeholders at this level expect documentation in the form of financial reports to provide relevance to climate change and energy transition. The purpose of this research is to find out how fixed asset financial data in the statement of financial position reflects the risks of energy transition and how PLN literates financial reports through disclosure of energy transition.

1.1 Objectives

The presentation of numbers in financial reports, particularly the statement of financial position, can provide insight into the condition or prerequisites of assets, liabilities, and equity of a reporting entity in a dimension it faces. PLN's fixed assets in consolidated financial reports can provide an overview of its electricity production. The transition from using fossil-based fuels to generate electricity to using new and renewable energy sources is a significant shift. Electric utility corporations that have fixed assets for production, primarily using fossil fuels, must now allocate resources to transition to renewable energy sources. The question is how relevant financial reporting is to the state of energy transition, what information is relevant to the company's asset resources? Does the financial report provide comprehensive financial information to provide what users need related to energy transition? Management's responsibility in financial reporting faces a challenge in the form of information systems as a manifestation of value creation. Energy transition in the electricity industry is a crucial agenda. The impact of climate change or greenhouse gas effects is becoming urgent. Natural phenomena (weather) such as floods, droughts, and extreme temperatures affect the economy. The operation of power plants as certain electricity centers is indicated to contribute to emissions that impact climate change or weather. Taking the example of how coal-fired power plants (PLTU) burn coal to power generator turbines, it is certain to produce carbon dioxide (CO2) that has a negative impact on the climate. Are PLTU

ready to be replaced or modified with the use of other energy sources such as sunlight, wind, or even geothermal energy? This research is expected to contribute to electric utility corporations on how to make financial reporting relevant in the form of useful information on energy transition for financial report users. The interest of global investors in providing green financing for energy transition can be fulfilled through corporate financial reporting. The research method used is descriptive analysis.

2. Literature Review and Research

2.1 Dialogic Financial Reporting Literacy

As a specific type of reporting, financial reports contain financial information that can only be understood by readers with good financial literacy. The compilers of financial reports, as parties with expertise and knowledge of financial accounting, would be better off if the report included literacy elements for users of financial reports. According to Listyaningsih et al., financial literacy, as we know, refers to the knowledge, wisdom, and skills required for effective money management to prevent future financial problems (Listyaningsih et al., 2024). Therefore, the inclusion of information in financial reports will help achieve literacy goals. In the era of energy transition in the 21st century, financial reports are an integral part of literacy to capture the information provided to address energy transition. It doesn't mean being fixated on financial reports alone, but through integrated, relevant, and comprehensive reporting, energy transition issues can be disclosed in financial reports. Long et al. explain that the framework of financial mechanisms for energy transition includes six factors: (1) public financing mechanisms, (2) private financing mechanisms, (3) market-based mechanisms, (4) innovative financing mechanisms, (5) risk mitigation instruments, and (6) institutional support and capacity development, (Long, 2025).

Financial reporting in the form of a set of financial statements should effectively be able to be dialogical for the owners of the reports and their users in managing the complexity of information while initiating a stronger dialogue with stakeholders (George et al., 2021; Tanima et al., 2023; Bellucci et al. 20190, Aureli et al., 2023). Dialogic literacy focuses more on the elements presented and disclosed in financial reports. The ambitious goal of this framework is to serve as a guide for organizations that want to enhance their disclosure on matters relevant to value creation; improve accountability and governance on non-financial issues; and support decision-making and actions that are oriented towards value creation in the short, medium, and long term. (IIRC, 2021, Pigatto et al., 2023).

2.2 Disclosure of Accounting Policies on Energy Transition

Financial accounting policies enable corporate entities to apply suitable financial reporting standards across all aspects of financial report preparation and presentation. Beyond the technical aspects of recognition, measurement, and presentation, disclosure is a crucial pillar in implementing financial accounting policies. The Task Force on Climate-related Financial Disclosures (TCFD) is a globally influential and widely supported climate disclosure standard that fosters consistency among G20 countries and provides a common framework for carbon-intensive industries and companies to disclose relevant information, (Liu et al., 2023).

Furthermore, the 2023 TCFD report surveyed the top 50 global asset managers and top 50 asset owners based on assets under management. According to the report, over 80% of the largest asset managers and 50% of the largest asset owners reported in line with at least one of the 11 recommended disclosures. Specifically, nearly 70% of the top 50 asset managers and 36% of the top 50 asset owners disclosed in line with at least five of the recommended disclosures, (Task Force on Climate-Related Financial Disclosures (TCFD), 2023).

2.3 Value Relevance of Energy Transition in Financial Reports"

The relevance of financial reports is measured by the extent to which financial report users utilize the available information to obtain the expected data and information according to their needs.

2.4 Theoretical Framework

2.4.1 Sectoral Management Strategy

In the current corporate situation, which is experiencing and facing significant impacts from climate change, corporations in the electricity sector are required to make immediate adjustments and significant changes. Observers of the Greenhouse Gas (GHG) effect are highly concerned about the impacts that occur due to their broad spectrum and long-term nature. Therefore, a strategy for creating sustainability is highly relevant today. Porter's theory views strategy for sustainability as achieving competitive success in business areas. According to this theory, costs must be able to reach a low level in all aspects, thus winning the competition through cost leadership. Briefly, Porter's theory

defines strategy as creating and maintaining a competitive advantage in every business field (Porter 1980, 1985). In line with this definition of competitive strategy, Porter argues that two basic types of competitive advantage can be identified and possessed by a company, namely cost leadership and differentiation. This may be the most commonly used strategy concept in management accounting literature and strategic management accounting research. In essence, the emphasis of cost leadership is on efforts to offer products and services at a low cost and run their business in such a way that their overall costs remain consistently low. *(*Zaini Miftach, 2018).

The electricity sector is driven by power generating units, namely power plants that utilize energy sources from fossil fuels and new and renewable energy. Due to the nature of its management strategy, which largely involves managing power generation, transmission, distribution, and subsequently providing services to end-users of electricity. Thus, the management strategy theory in this sector revolves around technological and economic aspects, specifically integrating energy sources effectively.

Competitive analysis of the energy sector and electrification market also occurs in developed countries like Russia(Lisin et al., 2017). Thermal power plants that use natural gas, transitioning to new energy-efficient technology means phasing out all condensation steam power plant units and replacing them with combined cycle units (Chiabai, Platt, & Strielkowski, 2014; Smil, 2015).

Constructing modern combined cycle power plants is a sensible approach. To make such projects feasible, new regulatory and technical frameworks must be developed, considering advancements in energy engineering. Enhancing coal-fired power plants requires improving turbine and boiler efficiency to reduce emissions and losses. Moreover, significant efficiency gains in coal-fired power plants can be achieved through the development of IGCC technology, enabling the design of more efficient combined cycle units." (Bugge, Kjær, & Blum, 2006; Lykova, Lisin, & Kocherova, 2012; Tola & Pettinau, 2014; Zhang, 2013).

2.4.2 Energy Transition Risks on Climate Change

Climate risk management necessitates the identification and assessment of climate-related hazards, such as sea-level rise, droughts, and extreme weather events, which pose significant threats to human settlements, infrastructure, and ecosystems. To mitigate these risks, effective disaster risk reduction and management strategies are crucial, encompassing early warning systems, emergency preparedness, and post-disaster recovery planning, (Metz et al., 2015).

The Earth's temperature has increased by more than 1.1°C over the past two centuries, resulting in land temperature rises that have caused droughts in some regions and increased sea surface temperatures that have led to higher humidity levels and more extreme precipitation events, including severe flooding, in other areas. The rate of global warming has been non-uniform over the past century, with periods of both accelerated and decelerated climate change (Joseph Room, 2022).

Climate change significantly impacts the electricity sector, particularly PLN's generation division, where weather conditions affect machine operations. Hot weather reduces reservoir water levels and cooling water quality, while high rainfall causes flooding and affects coal dryness. Transitioning to cleaner energy sources is challenging due to existing infrastructure and fossil fuel dependence. Energy transition costs are new and potentially higher than operating existing fossil fuel-based plants. Moreover, evolving climate policies and regulations may pose investment and development challenges for renewable energy.

2.4.3. Risk Level and Its Impact

To mitigate risks, senior executives must conduct periodic reviews of risk management systems and controls. Regulatory bodies should also verify that financial services companies' top management possesses the requisite risk management expertise, operates impartially, and implements effective risk detection mechanisms. (Kabuye et al., 2019). "Understanding risk levels and their impact is crucial for making informed decisions. By identifying and assessing risks, individuals and organizations can take steps to reduce the likelihood of undesirable events and minimize their impact. The best approach to managing risk will vary depending on the situation. It's essential to consider all available options and choose the approach that best fits the individual's or organization's needs and risk tolerance.

Risk awareness and assessment are critical components of informed decision-making. By identifying and evaluating potential risks, individuals and organizations can implement strategies to mitigate adverse events and minimize their impact. Effective risk management requires a situational approach, taking into account the specific needs and risk tolerance of the individual or organization.

3. Methods

3.1 Data Structure

3.1.2 Dependent Variables

The energy transition within the PLN Group is taking place across various entities, encompassing power generation, transmission networks, distribution substations, and other critical infrastructure that facilitates the delivery of electricity to end-users. Our analysis is based on consolidated financial data from four key entities over a three-year period (2021-2023). The electricity utility assets, serving as dependent variables in the PLN Group's financial reports, have been identified and examined on Table 1.

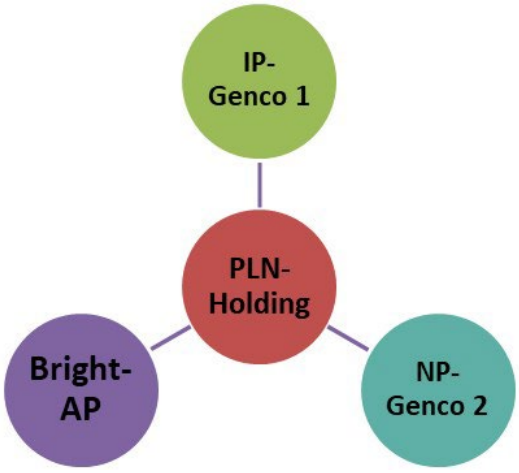
Table 1. Dependent Variables: Electrical Utility Asset Value Variables in 4 Electrical Utility Entities

No.	Identifikasi_Aset_Utilitas_Kelistrikan
1	Total_Aset
2	Aset_Tidak_Lancar
3	Utilitas_Bangunan_MS
4	Utilitas_Instalasi_dan_Mesin_MS
5	Utilitas_Jaringan_TD_MS
6	Utilitas_Instalasi_dan_Mesin_AHG
7	Utilitas_Jaringan_TD_AHG
8	AD_Utilitas_Bangunan_MS
9	AD_Utilitas_Instalasi_dan_Mesin_MS
10	AD_Utilitas_Jaringan_TD_MS
11	AD_Utilitas_Instalasi_dan_Mesin_AHG
12	AD_Utilitas_Jaringan_TD_AHG
13	Aset_Dalam_Konstruksi
14	Aset_Tidak_Dipergunakan
15	AD_Aset_Tidak_Dipergunakan

Data source: PLN and Group Financial Reports – processed

3.1.3 Financial Reporting Entity Variable

The entity structure in the PLN business group, where the Electricity Utility (where the data was obtained) is presented in Figure 1.



Data source: PLN and Group Financial Reports – processed

Figure 1. PLN Business Group as an Electricity Utility Provider

The integration of financial reports is complex, as shown in Figure 2, which outlines the policy framework for different business units within the electricity company. The process involves a seamless flow from power generation to transmission and distribution. The end result is revenue generation from electricity sales. Customers receive a detailed bill, including their electricity consumption (kWh), tariff rates (Rupiah/kWh), and total costs (Rupiah). The electricity company must calculate these components accurately, including the tariff set by the government, while ensuring a reliable electricity supply (Figure 2).

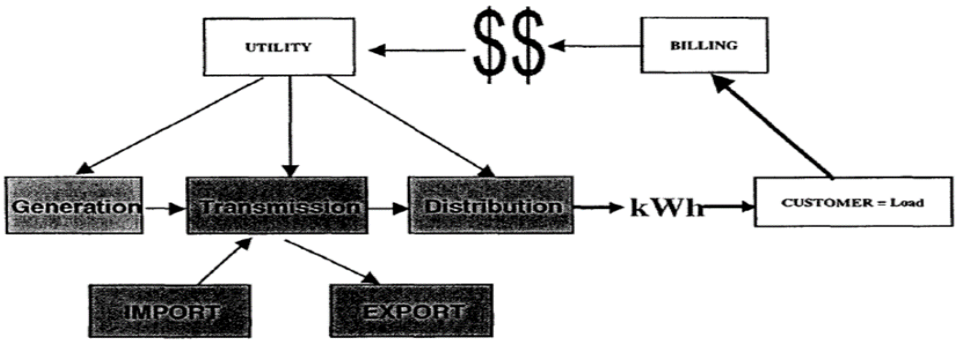


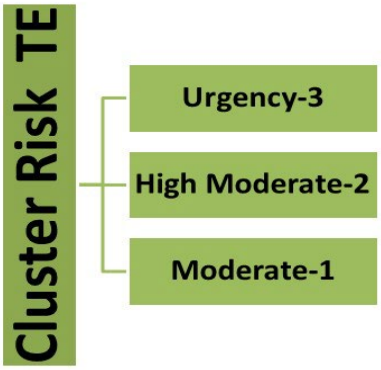
Figure 1: Simple Business Model of an Electric Utility
Source: Mishra, V. J., & Khardenvis, M. D. (2012)

Figure 2. Integration of Financial Reports in Electricity Utility Process

3.1.4 Independent Variables

Coal has long been a mainstay of Indonesia's economy and energy sector. Nevertheless, transitioning to renewable energy poses significant challenges, including substantial investment requirements, early retirement costs for coal-fired power plants, employment and revenue losses, institutional transition costs, potential hikes in electricity prices, stranded asset risks, and reduced tax revenues,
(Resosudarmo et al., 2023).

Our analysis focuses on three key risk variables: climate change risks (Moderate-1), sustainability risks (High Moderate-2), and energy transition risks (Urgency-3). By understanding these risks, we can develop effective mitigation strategies to ensure sustainability in the energy transition process, guided by transition energy and sustainability risks theories (Figure 3).



Source: PLN and Group Sustainability Report - processed
Figure 3. Independent Variables – Risk of Relevance

3.2 Disclosure as a Form of Relevance

Financial accounting standards have responded to climate change concerns from various stakeholders, including investors, shareholders, and public and private sector institutions, through international and national financial accounting standards. Recent initiatives, such as those led by the Global Reporting Initiative (GRI) and non-profit organizations like the Climate Disclosure Standards Board, emphasize the need for companies to disclose the impact of climate change (Matisoff et al., 2013). Research by Dahl and Fløttum explores how climate change is conceptualized in corporate disclosures by three major energy companies: Statoil (Norway), Suncor Energy (Canada), and Total (France). The analyzed reports represent the first comprehensive disclosures by these companies, where climate change is treated as an integral part of their overall corporate strategy, reflecting top management's commitment to addressing the issue (as cited in Eleftheriadis and Anagnostopoulou, 2017). (Dahl & Fløttum, 2019)).

Disclosures in financial reports are based on their relevance to energy transition, guided by the Conceptual Framework for Financial Reporting (IFRS). According to this framework, when the probability of economic benefits is uncertain, relevant information about assets or liabilities includes potential inflows or outflows, timing, and influencing factors. Such details are often provided in the financial statement notes (Collis et al., 2012). Disclosures are categorized into three main areas:1. Strategic energy transition policies, 2. Changes in fixed asset utilization, and 3. Physical modifications or replacements of fixed assets (Figure 4).

Source: PLN and Group Sustainability Report - processed

Figure 4. Three Main Area of Disclosure

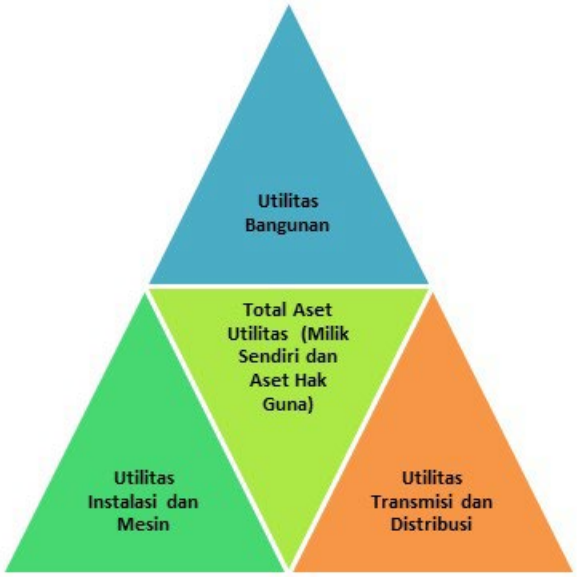
The relevance of strategic energy transition policies has been explored by Wittmayer & Loorbach (2016) through a governance lens. They argue that transition management can mitigate the complexity of climate and energy policies across four dimensions: 1. Temporal: adopting an intergenerational perspective, 2. Spatial: integrating systems, levels, and actors, 3. Innovative: emphasizing experimentation and innovation in technology, policy, business, and culture, and 4. Multi-actor: uniting diverse stakeholders to address complex transition challenges collaboratively. (Wittmayer & Loorbach, 2016; Gui, 2024).

Adapting fixed assets to the energy transition requires modifying their operational functions to fit new environmental demands. The challenge lies in determining the extent of effort needed to repurpose these assets and ensure they contribute to the transition. Assessing climate-related risks for assets or liabilities involves evaluating risk characteristics and estimating potential financial impacts. This can be done through methods like carbon footprint analysis and scenario analysis, which help understand transition risks. Climate risk pricing further requires analyzing exposure to quantify potential financial losses from climate-related risks. (Thöma dan Chenet, 2017, Greenwood & Warren, 2022).

Fixed asset management is relevant to energy transition, particularly in terms of replacing or modifying physical assets. This relevance is disclosed through financial statement notes detailing the impact of energy transition on fixed assets. The literature on stranded assets highlights the consequences of financial institutions' failure to accurately price climate risk. Stranded assets refer to assets that suffer unexpected or premature loss of value, devaluation, or become liabilities. (Caldecott et al., 2013, hlm. 7, Greenwood & Warren, 2022).

4. Data Collection

Data analysis involves developing a financial reporting model, particularly for fixed assets in the statement of financial position. This model aims to illustrate how fixed asset data interacts with energy transition. For PLN, the majority of fixed assets are electricity utility assets, which are crucial for generating electricity and driving revenue. A detailed diagram of these assets is provided in Figure 5.



Source: PLN and Group Sustainability Report - processed

Figure 5. PLN and Group Sustainability

4.1 Electric Utility Fixed Assets

Electricity utility fixed assets encompass all physical assets used by power companies to generate, transmit, distribute, and sell electricity to consumers. These assets, which include general and supporting assets, have a useful life exceeding one year and are not intended for resale as part of normal business operations (Table 2).

Table 2. Electric Utility Fixed Asset

Identifikasi_Aset_Utilitas_Kelistrikan	Klasifikasi_Utilitas_Kelistrikan	PLN_Konsolidasian	Indonesia_Power	Nusantara_Power	PLN_Batam
Utilitas_Bangunan_MS_2023	Bangunan Kelistrikan	83,884,900	25,874,415	28,691,460	-
Utilitas_Bangunan_MS_2022	Bangunan Kelistrikan	80,241,862	25,545,547	28,621,330	-
Utilitas_Bangunan_MS_2021	Bangunan Kelistrikan	76,580,417	25,209,499	28,162,541	-
Utilitas_Instalasi_dan_Mesin_MS_2023	Instalasi dan Mesin Kelistrikan	590,572,905	267,001,118	231,133,103	2,336,907
Utilitas_Instalasi_dan_Mesin_MS_2022	Instalasi dan Mesin Kelistrikan	576,903,905	232,870,498	226,843,774	2,309,651
Utilitas_Instalasi_dan_Mesin_MS_2021	Instalasi dan Mesin Kelistrikan	557,335,600	72,315,486	220,143,089	2,094,463
Utilitas_Jaringan_MS_2023	Instalasi dan Mesin Kelistrikan	532,313,072	5,597,800	4,360,902	4,164,335
Utilitas_Jaringan_MS_2022	Instalasi dan Mesin Kelistrikan	491,131,837	4,426,539	4,305,416	3,951,202
Utilitas_Jaringan_MS_2021	Instalasi dan Mesin Kelistrikan	440,633,486	4,303,218	4,297,027	3,750,133
Utilitas_Instalasi_dan_Mesin_AHG_2023	Instalasi dan Mesin Kelistrikan	43,335,756	4,787,976	143,671	3,831,068
Utilitas_Instalasi_dan_Mesin_AHG_2022	Instalasi dan Mesin Kelistrikan	43,195,022	4,650,919	157,797	3,552,302
Utilitas_Instalasi_dan_Mesin_AHG_2021	Instalasi dan Mesin Kelistrikan	43,841,293	3,668,652	-	3,226,436
Utilitas_Jaringan_AHG_2023	Instalasi dan Mesin Kelistrikan	1,501,637	-	1,662,263	-
Utilitas_Jaringan_AHG_2022	Instalasi dan Mesin Kelistrikan	-	-	1,890,573	-
Utilitas_Jaringan_AHG_2021	Instalasi dan Mesin Kelistrikan	-	-	-	-
AD_Utilitas_Bangunan_MS_2023	Bangunan Kelistrikan	5,434,440	1,610,580	1,741,884	-
AD_Utilitas_Bangunan_MS_2022	Bangunan Kelistrikan	2,703,562	800,311	867,592	-
AD_Utilitas_Bangunan_MS_2021	Bangunan Kelistrikan	7,443,067	858,853	1,274,101	-
AD_Utilitas_Instalasi_dan_Mesin_MS_2023	Instalasi dan Mesin Kelistrikan	39,593,908	17,055,013	14,935,815	253,837
AD_Utilitas_Instalasi_dan_Mesin_MS_2022	Instalasi dan Mesin Kelistrikan	19,968,790	8,052,883	7,453,258	157,758
AD_Utilitas_Instalasi_dan_Mesin_MS_2021	Instalasi dan Mesin Kelistrikan	54,065,597	7,027,446	8,068,140	156,385
AD_Utilitas_Jaringan_MS_2023	Instalasi dan Mesin Kelistrikan	33,208,797	-	513,886	246,882
AD_Utilitas_Jaringan_MS_2022	Instalasi dan Mesin Kelistrikan	15,768,698	-	123,201	121,112
AD_Utilitas_Jaringan_MS_2021	Instalasi dan Mesin Kelistrikan	37,443,370	-	404,650	300,736
AD_Utilitas_Instalasi_dan_Mesin_AHG_2023	Instalasi dan Mesin Kelistrikan	21,429,780	1,720,709	95,780	1,832,772
AD_Utilitas_Instalasi_dan_Mesin_AHG_2022	Instalasi dan Mesin Kelistrikan	20,512,269	2,103,783	27,443	1,649,220
AD_Utilitas_Instalasi_dan_Mesin_AHG_2021	Instalasi dan Mesin Kelistrikan	18,751,846	1,235,297	-	1,626,787
AD_Utilitas_Jaringan_AHG_2023	Instalasi dan Mesin Kelistrikan	12,514	-	137,976	-
AD_Utilitas_Jaringan_AHG_2022	Instalasi dan Mesin Kelistrikan	-	-	4,752	-
AD_Utilitas_Jaringan_AHG_2021	Instalasi dan Mesin Kelistrikan	-	-	-	-

Source: PLN and Group Sustainability Report – processed

4.2. Total Asset

Total assets are presented in Table 3.

Table 3. Total Asset

Identifikasi_Aset_Utilitas_Kelistrikan	Klasifikasi_Utilitas_Kelistrikan	PLN_Konsolidasian	Indonesia_Power	Nusantara_Power	PLN_Batam
Total_Aset_2023	Total Aset	1,670,639,704	386,200,863	343,461,168	21,833,136
Total_Aset_2022	Total Aset	1,638,139,276	374,409,423	332,593,691	20,630,832
Total_Aset_2021	Total Aset	1,613,216,456	193,713,794	330,454,559	20,519,543
Aset_Tidak_Lancar_2023	Aset Tidak Lancar	1,539,256,218	324,009,433	294,577,850	18,362,697
Aset_Tidak_Lancar_2022	Aset Tidak Lancar	1,518,747,894	335,661,019	298,045,438	18,178,443
Aset_Tidak_Lancar_2021	Aset Tidak Lancar	1,527,305,081	159,481,562	297,727,450	17,991,484

Source: PLN and Group Sustainability Report – processed

4.3. Unused/Unused Assets

Total assets are presented in Table 4.

Table 4. Unused/Unused Assets

Identifikasi_Aset_Utilitas_Kelistrikan	Klasifikasi_Utilitas_Kelistrikan	PLN_Konsolidasian	Indonesia_Power	Nusantara_Power	PLN_Batam
Aset_Dalam_Konstruksi_2023	Kelistrikan Dalam Konstruksi	128,753,555	9,009,609	4,746,689	156,986
Aset_Dalam_Konstruksi_2022	Kelistrikan Dalam Konstruksi	135,756,415	8,762,242	4,204,527	67,682
Aset_Dalam_Konstruksi_2021	Kelistrikan Dalam Konstruksi	167,052,758	5,933,624	7,004,989	146,144
Aset_Tidak_Dipergunakan_2023	Kelistrikan Tidak Dipergunakan	16,077,130	2,021,740	3,632,374	76,130
Aset_Tidak_Dipergunakan_2022	Kelistrikan Tidak Dipergunakan	19,283,887	2,942,791	5,991,738	76,130
Aset_Tidak_Dipergunakan_2021	Kelistrikan Tidak Dipergunakan	20,658,820	1,282,381	6,631,832	74,059
AD_Aset_Tidak_Dipergunakan_2023	Kelistrikan Tidak Dipergunakan	8,999,230	1,831,519	2,376,031	76,130
AD_Aset_Tidak_Dipergunakan_2022	Kelistrikan Tidak Dipergunakan	10,594,605	1,752,280	2,540,315	76,130
AD_Aset_Tidak_Dipergunakan_2021	Kelistrikan Tidak Dipergunakan	12,342,577	1,150,332	2,388,516	74,059

Source: PLN and Group Sustainability Report – processed

5. Results and Discussion

Creating a relational framework in financial reporting links financial information to energy transition, especially regarding risk. Financial reporting follows standardized structures set by IFRS and/or PSAK, agreed upon by standard setters, reporting entities, and users.

5.1 Numerical Results

Descriptive Statistic in Table 5.

Table 5. Descriptive Statistic

No.	Dependent_Variabel	Mean	Std. Deviation	Skewness	Kurtosis	Koefisien Variasi	Analisis Skewness	Analisis Kurtosis
1	Holding_Kelistrikan_PLN	308,102,931.91	535,619,249.67	1.85	1.96	173.84%	Nilai-nilai ekstrem yang besar	Data lebih tersebar secara merata di seluruh rentang , bukan terkonsentrasi di sekitar rata-rata.
2	Genco_1_Pembangkitan_IP	56,108,425.64	112,990,595.96	2.03	2.71	201.38%		
3	Genco_2_Pembangkitan_NP	61,165,302.02	115,804,567.67	1.65	0.97	189.33%		
4	Anak_Perusahaan_Pembangkitan_Bright	3,420,034.91	6,566,708.86	2.10	2.86	192.01%		

Source: processed

The coefficient of variation measures relative data dispersion, useful for comparing datasets with different means or units. Dispersion levels above 100% indicate extreme variability, suggesting significant differences between financial data points. Skewness and Kurtosis analyses further reveal data characteristics, with Skewness > 0 indicating right-tailed distribution and Kurtosis < 3 indicating a flatter distribution with fewer outliers. These findings, presented in Table 7, inform energy transition risk assessment based on financial data in Table 6.

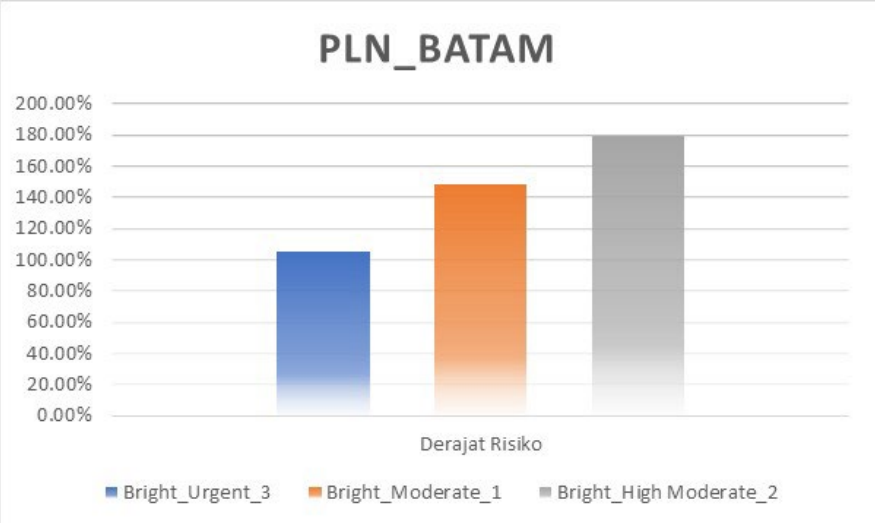
Table 6. Cluster Risk

Cluster Risk TE		Mean	Std. Deviation	Koefisien Variasi
Holding_Kelistrikan_PLN	High Moderate_2	467487201.00	709469672.985	151.76%
	Moderate_1	519251715.78	756915391.725	145.77%
	Urgent_3	**149230003.42**	**227559402.526**	**152.49%**
Genco_1_Pembangkitan_IP	High Moderate_2	88160730.00	146394701.196	166.05%
	Moderate_1	92237006.33	144281821.921	156.43%
	Urgent_3	**26534055.71**	**70523486.939**	**265.78%**
Genco_2_Pembangkitan_NP	High Moderate_2	92652044.25	146877108.633	158.53%
	Moderate_1	101545727.11	146439362.472	144.21%
	Urgent_3	**30279271.50**	**75684173.261**	**249.95%**
Anak_Perusahaan_Pembangkitan_Bright	**High Moderate_2**	**5279526.92**	**9481745.291**	**179.59%**
	Moderate_1	6109473.56	9051526.639	148.16%
	Urgent_3	1481749.42	1563395.144	105.51%

Source: processed

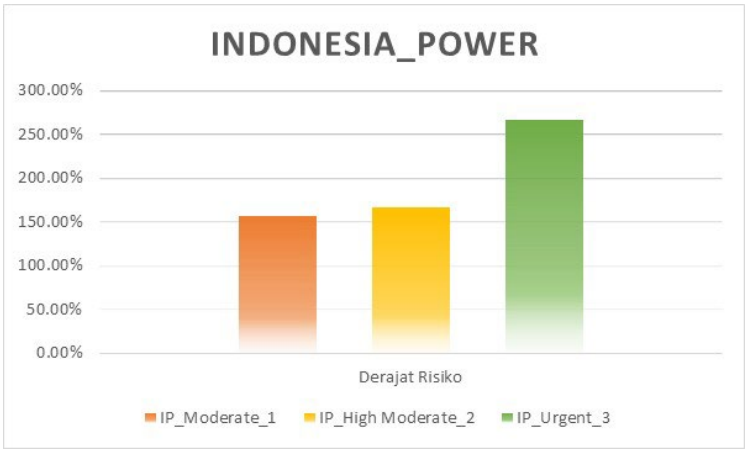
5.2 Graphical Results

Graphical results presented in Figure 6 to Figure 9.



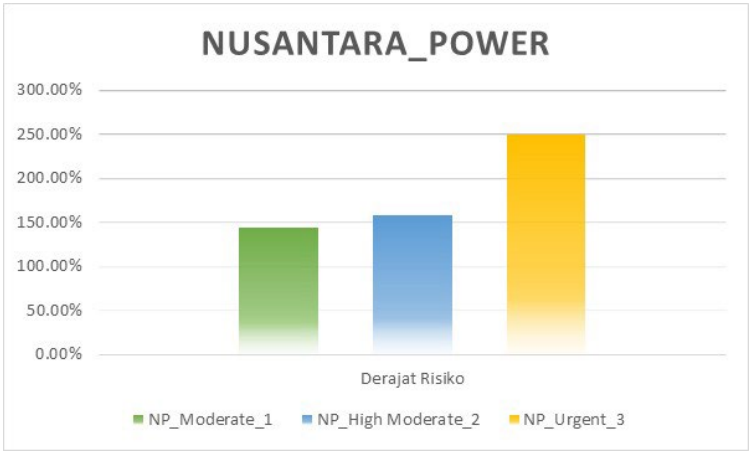
Source: processed

Figure 6.PLN_BATAM



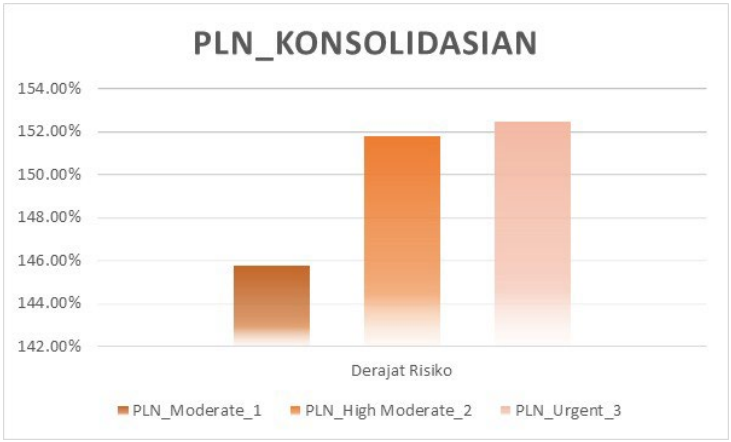
Source: processed

Figure 7. Indonesia power



Source: processed

Figure 8. NUSANTARA Power



Source: processed

Figure 9.PLN

5.3 Proposed Improvements

1. Presenting energy transition fixed assets as a separate classification within fixed assets.
2. Providing additional disclosures in the notes to the financial statements regarding accounting policies for energy transition fixed assets.

5.4 Validation

Table 7. Test F

Source	Dependent Variables	F	F-Tabel	Cluster Risk TE	Interpretasi H-0
Cluster Risk TE (Independent Variable)	Holding_Kelistrikan_PLN	2.436	2.4218	Moderate_1, High Moderate_2, Urgent_3	Teridentifikasi Risiko TE
	Genco_1_Pembangkitan_IP	1.832	2.4218		Tidak Teridentifikasi Risiko TE
	Genco_2_Pembangkitan_NP	1.922	2.4218		Tidak Teridentifikasi Risiko TE
	Anak_Perusahaan_Pembangkitan_Bright	2.430	2.4218		Teridentifikasi Risiko TE

Source	Dependent Variables	Sig.	Tingkat Signifikan (α)	Pengungkapan_Terhadap_Transisi_Energi	Interpretasi Pengungkapan_Terhadap_Transisi_Energi
Cluster Risk TE (Independent Variable)	Holding_Kelistrikan_PLN	0.100	0.05	Kebijakan Strategis TE, Perubahan Pemanfaatan Aset, & Penggantian atau Perubahan Fisik Aset	Ditolak
	Genco_1_Pembangkitan_IP	0.173	0.05		Ditolak
	Genco_2_Pembangkitan_NP	0.159	0.05		Ditolak
	Anak_Perusahaan_Pembangkitan_Bright	0.100	0.05		Ditolak

Source: processed

6. Conclusion

Financial information from electricity utility entities with relevance to energy transition is crucial. While financial reports must adhere to accounting standards, they should also accommodate other relevant information. Electricity utilities engaged in energy transition initiatives, such as climate change mitigation, should demonstrate this commitment through relevant financial reporting.

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