

Volume 2, No. 10 October 2023 - (1208-1222)

p-ISSN 2980-4868 | e-ISSN 2980-4841

<https://ajesh.ph/index.php/gp>



LITERATURE STUDY : THE ROLE OF ACCOUNTANTS IN NET ZERO EMISSION

¹Yanuar Ramadhan,²Erma, ³Maulana, ⁴Melinda, ⁵Samuel, ⁶Suryanto

Esa Unggul University

yanuar.ramadhan@esaunggul.ac.id, erma.listy10@student.esaunggul.ac.id,
maulanash@student.esaunggul.ac.id, melindaastuti90@student.esaunggul.ac.id,
Samuelnikoputra@student.esaunggul.ac.id, suryanto67@student.esaunggul.ac.id

ABSTRACT:

Global warming and climate change have moved the world towards action to reduce carbon emissions and achieve net zero emissions. Oil and gas sector companies have a major impact on carbon emissions due to their carbon-intensive operations. In order to achieve the net zero emission target, GAS companies need to involve all aspects of their organization, including the accounting function. The main objective of this study is to identify the role of accountants in achieving the net zero emission target in GAS companies in 2022. This research uses the literature review method. Data were collected from various relevant literature sources, such as journal articles, company annual reports, environmental guidelines, and case studies related to MIGAS and efforts to achieve net zero emission. Data obtained from annual reports of oil and gas companies were analyzed using descriptive analysis. The results showed that accountants have an important role in supporting the efforts of oil and gas companies to achieve net zero emissions. Accountants can provide information, support the implementation of net zero emission, and increase transparency and accountability of oil and gas companies in an effort to achieve net zero emission.

Keywords: Accountant, Net Zero Emission, Oil and Gas Company

INTRODUCTION

The oil and gas industry (MIGAS) plays a significant role in a country, both in meeting domestic industry's energy and raw material needs, as well as in contributing to the country's foreign exchange earnings (Annur, 2023) (Janitra et al., 2023). However, companies in the OIL and GAS sector have a large impact on carbon emissions because their operational characteristics tend to be carbon-intensive. The activities of extracting petroleum, processing natural gas, and distributing these products often involve processes that release carbon dioxide (CO₂) and other gases into the atmosphere. These activities have an impact on global warming.

Global warming is an increase in the average temperature of the Earth's atmosphere, oceans and land (Jones & Wigley, 1990). As a result of global warming, various impacts will occur, including climate change, sea level rise, disruption in agriculture, impacts on ecosystems and animal and plant life, as well as impacts on human health (Pratama & Parinduri, 2019) (Syofiyardi et al., 2022). Currently, companies are expected to become more transparent in disclosing information related to their operations. Company transparency and accountability are reflected in the annual reports they produce (Sariman & Akbar, 2022). One example of information disclosure is regarding carbon emissions, which is often part of additional reports required by statutory regulations (Rahayu et al., 2019).

Disclosure of carbon emissions is regulated in the Limited Liability Company

(PT) Law no. 40 of 2007 article 66c which requires PT companies to submit reports on social and environmental responsibility activities in their annual reports. This is also regulated in Financial Services Authority Regulation Number 51/PJOK.03/2017 concerning the implementation of sustainable finance for financial service institutions, issuers and public companies, where issuers or public companies must include reports regarding social and environmental responsibility in their annual reports or reports. their sustainability.

G20 country leaders and the global business community are encouraged to be more active in encouraging sustainable business governance practices to support Environmental, Social, and Governance (ESG) initiatives (Lindsay & Martella, 2020). At the Webinar Optimizing Sustainability Governance through a Single Set of High-Quality Global Sustainability Reporting Standards, the Chair of the National Management Board of the Indonesian Accountants Association (DPN IAI) emphasized that the accounting profession has an important role in global contributions to reducing carbon emissions. The expertise possessed by accountants is considered suitable for achieving targets in overcoming climate change and maintaining sustainability. The existence of strong and robust sustainable governance is very important (Mahardika, 2020).

Net-Zero Emission (NZE) or zero carbon emissions is a situation where the amount of carbon released into the

atmosphere does not exceed the amount absorbed by the earth (Sindhvani et al., 2022). To achieve this target, a transition from the current energy system to a cleaner energy system is needed, which aims to achieve a balance between human activities and natural balance (Soares et al., 2018). The main objective of this research is to identify the role of accountants in achieving the net zero emission target in oil and gas companies in 2022.

RESEARCH METHODS

This research uses a literature review method. Literature review is an orderly, clear, and reproducible approach to identifying, evaluating, and combining research work and ideas that have been produced by researchers and practitioners (Rahayu et al., 2019). Data was collected from various relevant literature sources, such as journal articles, 2022 annual reports of oil and gas companies, environmental guidelines, and case studies related to oil and gas and efforts to achieve net zero emissions. The following are the oil and gas companies that were used as objects in this research:

Table 1
List of Oil and Gas Companies

No	Name of Limited Liability Company	Code
1	PT Medco Energi Internasional Tbk	MEDS
2	PT Elnusa Tbk	THAT
3	PT Perusahaan Gas Negara Tbk	PGAS
4	PT Energi Mega Persada Tbk	ENRG
5	PT Apexindo Pratama Duta Tbk	APEX
6	PT Rukun Raharja Tbk	RAJA
7	PT AKR Corporindo Tbk	SHARP
8	PT Surya Esa Perkasa Tbk	THAT
9	PT Super Energy Tbk	SURE
10	PT Capitalinc Investment Tbk	MTFN
11	PT Mitra Investindo Tbk	TREES
12	PT Perdana Karya Perkasa Tbk	CCP
13	PT Radiant Utama Interinsco Tbk	RUSSIA
14	PT Sigma Energy Compressindo Tbk	SICO
15	PT Ratu Prabu Energy Tbk	MEANING
16	PT Ginting Jaya Energy Tbk	WOWS
17	PT Sunindo Pratama Tbk	DOG
18	PT Astrindo Nusantara Infrastruktur Tbk	COW

Data obtained from annual reports of oil and gas companies were analyzed using descriptive analysis.

RESULTS AND DISCUSSION

Net zero emissions or zero carbon emissions is a condition where the amount of carbon emissions released into the atmosphere does not exceed the amount of emissions that the earth can absorb. To achieve this, a transition is needed from the energy system currently used to a clean energy system in order to achieve a balanced condition between human activities and natural balance (Suyitno, 2022). The NZE program requires industrial and developed countries to achieve net zero emissions by 2050. The existence of the NZE program encourages new regulations in various countries related to the supply of electrical energy. Conventional power plants that use coal such as Steam Power Plants (PLTU) are the main focus in setting new policies adapted to the NZE program (Aprilianto & Ariefianto, 2021).

Accounting is the progress of recording, grouping, summarizing, reporting and analyzing the financial data of an institution or organization (Syaharman, 2020). The accounting process begins by analyzing the flow of payments, then making a note in a journal, posting it to the ledger, and reporting it.

One of the main functions of accounting is to provide periodic reports to management, owners and parties outside the company. The main financial reports produced by accounting are the balance

sheet and profit and loss account. Even though the form of this second report may vary from one company to another, the main objective remains the same. The balance sheet is prepared with the aim of describing the financial position of an organization at a certain time, while the profit and loss statement is prepared with the aim of describing business results achieved in a certain period (Sung & Choi, 2012). The reports produced include: balance sheet, profit/loss report, capital changes report, and cash flow report. All these reports can be used by information users, in this case company managers, to make business decisions (Van der Veecken & Wouters, 2002). In connection with the above, the role of accountants in net zero emissions is to support oil and gas companies' efforts to achieve net zero emissions. They are not only responsible for managing data and information related to carbon emissions, but also for providing sustainability reporting which will help oil and gas companies understand the impact of their operations on the environment.

Based on this, oil and gas companies are trying to develop clear efforts to reduce emissions by issuing interim targets for climate change action, including PT Medco Energi Internasional Tbk. In formulating this target, PT Medco Energi Internasional Tbk carried out a strategic review and analysis of government NDCs in the countries where we operate, utilized internal Long-Term Planning (LTP) data, and conducted peer benchmarking. In addition, PT Medco Energi Internasional Tbk assesses risks and

opportunities related to climate change and considers PT Medco Energi Internasional Tbk's past and ongoing emission reduction and energy efficiency programs. PT Medco Energi Internasional Tbk also considers existing and developing regulatory trends and government frameworks in the countries where we operate. The process of setting interim targets for climate change action in 2022 is a collaborative effort that combines top-down and bottom-up approaches, as well as proactive engagement across corporate functions at all levels. The interim target for climate

change action is to reduce Scope 1 and Scope 2 GHG emissions by 20% and 30%, and methane emissions by 25% and 37% for the oil & gas business in 2025 and 2030, respectively, from the base year of 2019. PT Medco Energi Internasional Tbk chose 2019 as the base year because this period reflects our operations before the pandemic, making it the most appropriate reference point. In addition, PT Medco Energi Internasional Tbk has a target of installed capacity originating from renewable energy of 26% in 2025 and 30% in 2030 for the electricity business which is depicted in the following figure:

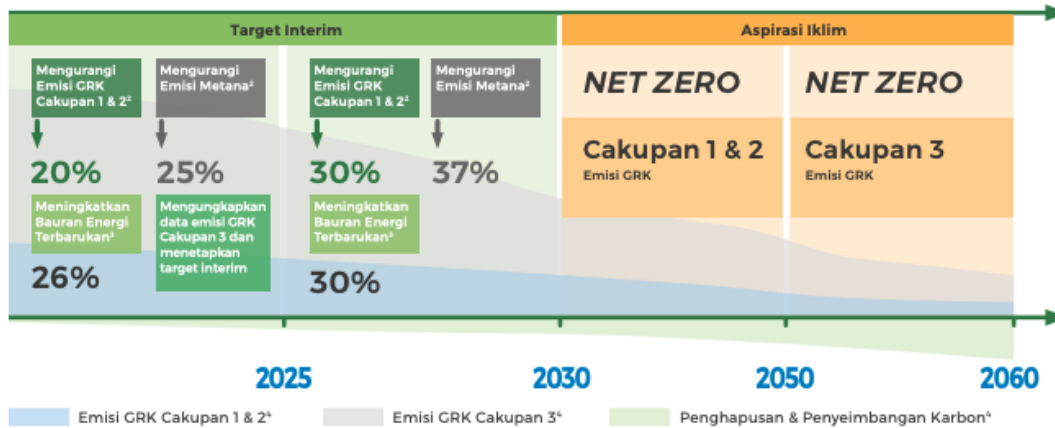


Figure 1. PT Medco Energi Internasional Tbk emission reduction and energy efficiency program
 Source: (MedcoEnergi, 2023)

Another company, namely PT Elnusa Tbk, a leading energy services company that provides total solutions and is part of the Pertamina Upstream Subholding, always pays attention to environmental aspects in its operational activities. This is in line with the green energy transition in Indonesia according to the road map towards Net Zero Emissions/NZE in 2060 or sooner. Apart from carrying out company operational activities, Elnusa also carries out various green action

steps, one of which is through tree planting actions carried out by the company in various regions in the country. Apart from planting trees, other green actions carried out by Elnusa in areas around the Company's work area include providing plant seeds, plant fertilizer, pesticides, hydroponic installations and green spaces to the local community, including providing positive information to the community about the importance of protecting the environment.

Various elements of society were also involved by the Company, from villages/districts, farmer groups, schools, to collaborating with Seasoldier, an independent Non-Governmental Organization (NGO) which actively invites young people to care about the environment (Fauzi, 2023).

PT Perusahaan Gas Negara Tbk (PGN) has an important role in ensuring national energy security through efforts to strengthen supplies and expand natural gas infrastructure development. As a Gas Subholding, PGN also plays a role in Indonesia's energy transition towards Net Zero Emission (NZE) in 2060. Natural gas, which has cleaner burning properties compared to other energy, can reduce emissions by up to 40% and will be one of the solutions to achieve the reduction target. Indonesia's emissions will reach 377 tons of CO₂ in 2035. To support these efforts, throughout 2022 PGN will continue to make

business breakthroughs, develop infrastructure and increase the use of natural gas to become a company that provides energy solutions for the Indonesian people, especially for the commercial, industrial, electricity and other sectors. transportation and household. PT Perusahaan Gas Negara Tbk (PGN) believes that business growth and sustainability are interrelated and go hand in hand. Therefore, PGN's sustainability focus and strategy are designed in line with the Company's business conditions and environment, by prioritizing environmental, social and governance commitments as well as the Sustainable Development Goals (SDGs) (Vega-Araujo & Heffron, 2022). In 2022 the Company has formulated sustainability values in 4 sustainability focuses which have been reduced to 14 sustainability initiatives/strategies and will continue to be implemented consistently until 2030.

FOKUS KEBERLANJUTAN SUSTAINABILITY FOCUSES	STRATEGI / INISIATIF STRATEGY / INITIATIVES
Mendukung pencapaian target Net Zero Emission (NZE) melalui peningkatan penggunaan gas bumi pada masa transisi energi Supporting efforts to achieve the target of Net Zero Emission (NZE) through increased use of natural gas during the transition phase	1. Memperluas penggunaan gas bumi pada masa transisi energi Expanding the use of natural gas during transition phase
	2. Optimasi biaya menuju NZE Cost optimization toward NZE
Melindungi alam Protecting nature	3. Mengurangi jejak lingkungan Reducing environmental footprint
	4. Mendukung program keanekaragaman hayati Promoting biodiversity program
Membangun program masyarakat yang kohesif dan tangguh Creating cohesive and resilient community programs	5. Meningkatkan program Kesehatan dan Keselamatan Kerja Improving Occupational Health and Safety program
	6. Mendukung HAM Promoting human rights
	7. Memprioritaskan penggunaan produk dan jasa lokal Prioritizing the use of local products and services
	8. Melakukan riset dan inovasi yang berkelanjutan Conducting sustainable research and innovation
	9. Meningkatkan kualitas hidup karyawan dan masyarakat sekitar Improving the quality of life of employees and the surrounding communities
	10. Meningkatkan manajemen tata kelola Improving governance management
	11. Meningkatkan struktur dan budaya cybersecurity Improving cybersecurity structure and culture
	12. Meningkatkan rating ESG Improving ESG rating
Menerapkan praktik bisnis yang bertanggung jawab Implementing responsible business practices	13. Meningkatkan komunikasi dan engagement Improving communication and engagement
	14. Meningkatkan <i>positioning</i> pembiayaan berbasis ESG Improving positioning of ESG-based financing

Figure 2. Focus and Sustainability Strategy of PT Perusahaan Gas Negara Tbk (PGN)
Source: (PT Perusahaan Gas Negara, 2022)

Management's commitment to sustainability is demonstrated, among other things, by establishing a Sustainability Committee and an Environmental, Social and Governance (ESG) Team in 2022 (PGN Directors' Decree No. 037201.K/OT.00/PDO.2022). Referring to the Decree of the PGN Board of Directors Number 037200.K/OT.00/PDO/2022 concerning the Sustainability Committee, PGN's sustainability management is carried out by the Board of Directors and related Directorates in accordance with their respective functions and responsibilities, chaired by the President Director. The Board of Directors can delegate sustainability management to each function in Subholding Gas and subsidiaries. The ESG Team, which

consists of the Directors and Heads of Work Units from each sector, is tasked with ensuring that the Company's future direction of change is in accordance with good ESG management, environmentally oriented/eco-friendly, and in accordance with appropriate rules and frameworks. In 2022, the ESG Team has developed the Company's sustainability focus and strategy. Further description of the Sustainability Committee and ESG Team can be seen in the Sustainability Governance Chapter. The company also continues to proactively socialize its internal sustainability culture, starting from the highest leadership to all employees through various channels such as testing understanding of Good Corporate Governance (GCG) and code of conduct for

each employee, implementing the GCG Online System (GOLS) application to increase awareness GCG and GCG branding through flyers on email blasts, websites and PGN

social media (PT Perusahaan Gas Negara, 2022).

Meanwhile, the programs carried out by PT Energi Mega Persada Tbk in an effort to reduce emissions are as follows:

Table 2
PT Energi Mega Persada Tbk NZE Program

Business unit	Program Activities
Malacca Strait	<ol style="list-style-type: none"> 1. Reducing flares, reducing burnt gas (flares) has an impact on reducing emission loads and gas fuel consumption in gas turbines. 2. Reducing emissions through optimizing the use of small capacity diesel generator sets at FSO Gandini, which reduces diesel consumption levels, thereby reducing emissions produced by the Company. 3. Replacement of conventional AC to R410A inverter AC
Point	<ol style="list-style-type: none"> 1. Installation of an AC - heater system for hot water needs at the Lubuk Ogong Mess, namely replacing the water heating system with an AC system that utilizes heat from the compressor to heat the water, so that it can be used for daily needs (MCK), thereby reducing the resulting emissions. by EMP Bentu Limited. 2. The Pekanbaru city gas network program (Jargas) is a program to replace household fuel for domestic needs which previously used LPG, kerosene or even firewood to use natural gas. 3. Replacing the R22 refrigerant with R32 in the air conditioner unit, namely replacing the air conditioner refrigerant with an ozone and environmentally friendly refrigerant
Longing	<ol style="list-style-type: none"> 1. Replacement of TL lamps using Rapid Start Type to LED type TL 2. Replacement of Conventional AC to R410A Inverter AC 3. Management of the use of 2300 horsepower supply/operation support vessels 4. Utilization of organic waste into compost 5. Santigi planting and conservation 6. Mangrove planting and conservation

Source: (PT Energi Mega Persada, 2021)

Apexindo has implemented and implemented several policies aimed at preserving the environment. These policies

include, among other things, efforts to save energy, reduce plastic waste, responsible waste management, use of environmentally friendly products and care for the Company's

assets as an effort to reduce emissions. In an effort to help reduce the risk of global warming and climate change, one of the efforts made by the Company is reducing greenhouse gas (GHG) emissions. In practice, the Company uses various methods to reduce emissions resulting from the Company's operational activities. Some of them are (Apexindo, 2022) (Ramadan, 2022):

1. Carrying out International Air Pollution Prevention (IAPP) and International Oil Pollution Prevention (IOPP) certification issued by the Ministry of Transportation of the Republic of Indonesia.
2. Optimizing the use of Pollution Prevention Equipment used to ensure pollution does not exceed the threshold.
3. Carry out regular maintenance of all tools and machines belonging to the Company.
4. Conduct regular emission tests on all generators and operational cars owned by the Company every 6 (six) months.
5. Ensure that Environmental Management Efforts (UKL) and Environmental Monitoring Efforts (UPL) reports are carried out properly.

2022 is the year where PT Rukun Raharja Tbk returns to focusing on business

expansion through a vision of sustainable development. The Company's performance showed significant strengthening. The company has developed adaptive steps to improve business performance in the future. In addition, in supporting business diversification, the Company succeeded in increasing revenue and business performance from Trading, Transportation, Gas Compression and a series of other business diversification activities. The Company continues to be committed to implementing the best practice principles of Good Corporate Governance in supporting sustainable development and improving the Company's operations. Going forward, the Company will continue to diversify its business by focusing on sustainable business practices and achieving the net zero carbon emission target by implementing energy efficiency in all its operational activities. The Company strives to minimize the impact of environmental damage that arises as a result of the company's operational activities. Therefore, various environmental management programs are implemented by the Company by implementing the ISO 14001:2015 standard concerning Environmental Management Systems which is certified periodically. CSR implementation programs in the environmental sector include the following (PT Rukun Raharja, 2022):

Table 3
PT Rukun Raharja Tbk CSR implementation program

Program	Company Commitment
Use of Paper Use of Paper	Urge all employees to be wise in using paper by maximizing the use of electronic mail (e-mail) as a medium of information and communication; and Utilizing used printed paper that is not used as notes.
Electricity Savings	Using Light Emitting Diode (LED) lamps; Turn off the air conditioner, computer or laptop, and other electronic devices when not in use; and Calling for online meetings with external parties to reduce fuel used for vehicles.
Water Saving	Regularly check the condition of taps, urinals, showers and toilets so that if there is damage, you can avoid leaks that can waste water; Through brochures or stickers distributed throughout all work units, the Company invites employees to save water by using water according to their needs; and Close the water tap when not in use.

PT AKR Corporindo Tbk understands that reducing Green House Gas (GHG) emissions has now become a serious concern for the world community. GHG is one of the causes of climate change. To overcome this, the Government of the Republic of Indonesia has also committed to achieving Net Zero Emissions by 2060. Therefore, AKR continues to strive to reduce GHG through GHG emission reduction policies. The GHG emissions calculated by the Company come from the use of fuel oil (BBM) and electrical energy. The use of fuel produces GHG emissions directly (scope 1), while the use of electricity produces GHG emissions indirectly (scope 2 and 3). Other sources of air emissions managed by the Company include the use of fuel oil from operational vehicles, generators, and business transportation operations, including deliveries by trucks and ships. The

method we use is to multiply the amount of fuel used and electricity by the Emission Factor (FE), thus producing a CO2 equivalent emission value. The emission factors that AKR uses are emission factors that apply internationally, including the IPCC Guidelines for National Greenhouse Gas Inventories (2006), Biograce, JEC database, and Ecoinvent. The company has not yet calculated emissions from methane gas (CH4), nitrous oxide, chlorofluorocarbons (CFCs), and hydro chlorofluorocarbons (HCFCs) (PT AKR Corporindo, 2022).

In a future increasingly aware of the challenges of climate change, leading oil and gas companies around the world have chosen to commit to sustainability. They not only play a role in meeting global energy needs, but are also responsible for maintaining a cleaner and more sustainable environment. In this spirit, every oil and gas

company has firmly announced comprehensive sustainability reporting plans.

This report describes the concrete and measurable steps taken by oil and gas companies to achieve the target of net zero greenhouse gas emissions. Stakeholders can see the company's commitment to reducing their environmental impact. Efforts involve major investments in environmentally friendly technologies, development of renewable energy, and increased production efficiency. Oil and gas companies are targeting achieving net zero emissions by 2060, with some even seeking to achieve this target sooner.

Sustainability is not just about oil and gas companies' work on the ground, but also about their efforts to empower local communities, ensure strong social responsibility, and create sustainable economic opportunities. With this sustainability report, oil and gas companies aim to create a better future, where the world's energy needs are met without damaging the environment. That is a real commitment to net zero emissions and a major step in safeguarding our planet for future generations.

The role of accountants in supporting oil and gas companies' efforts to achieve the target of net zero carbon emissions is very crucial. They are not only tasked with managing data and information related to carbon emissions, but also play an important role in providing sustainability reporting which is the basis for companies to understand the impact of their operations

on the environment. In this case, accountants play a major role in collecting, recording and analyzing data related to carbon emissions produced during the production process of oil and gas companies. Accurate and reliable data is very important because it is the basis for companies to design effective strategies to reduce carbon emissions. By monitoring and reporting this data, accountants help oil and gas companies evaluate their performance in achieving net zero emissions targets. Apart from that, the role of accountants also includes aspects of transparency and accountability for oil and gas companies. They ensure that the sustainability reports produced comply with applicable standards and regulations. This creates a clear picture of the company's efforts to achieve net zero emissions and provides stakeholders, such as investors and the public, with the information needed to measure the company's progress in reducing environmental impacts. Accounting in oil and gas companies is divided into three interrelated parts to achieve NZE, namely as follows:

1. Financial Accounting

Financial accounting involves recording, reporting, and analyzing a company's financial transactions. Financial accounting helps companies measure costs and revenues related to efforts to reduce carbon emissions. This includes calculating the costs of investing in sustainable technologies and practices, as well as analyzing the financial impact of sustainable projects. Financial reports

also play an important role in proving the performance of oil and gas companies to shareholders and investors, and encouraging the allocation of funds to sustainable projects.

2. Management Accounting

Management accounting is concerned with the use of financial and non-financial data for internal decision making in companies. Management accounting helps oil and gas companies design, measure and monitor carbon emission reduction strategies. This includes measuring the effectiveness of sustainable projects, optimal resource allocation, and long-term planning to achieve emissions targets. Management accounting also allows companies to prioritize sustainable initiatives that provide the best results in terms of reducing carbon emissions.

3. Environmental Accounting

Environmental accounting focuses on measuring and reporting the environmental impact of a company's

activities. Environmental accounting helps oil and gas companies identify and measure carbon emissions and other environmental impacts resulting from their operations. This data is used to prepare sustainability reports and fulfill environmental reporting requirements. Environmental accounting also helps companies to understand their contribution to the problem of climate change and to design strategies that minimize that impact.

These three branches of accounting work together to ensure that oil and gas companies' efforts to achieve net zero emissions are supported by accurate data, careful analysis and wise decision making. They help companies manage financial and environmental resources efficiently, monitor progress against sustainability targets, and increase transparency in reporting their environmental impacts to shareholders and society at large. Accounting is a powerful tool for connecting net zero emissions goals with the financial and operational realities of oil and gas companies.

that supports oil and gas companies in designing strategies to reduce carbon emissions. Apart from that, accountants also play a role in increasing the transparency and accountability of oil and gas companies by ensuring that their reports comply with applicable standards and provide a clear picture of the company's efforts to achieve net zero emissions. With the active contribution of accountants, oil and gas companies can be more effective in

CONCLUSION

Accountants have a crucial role in supporting oil and gas companies' efforts to achieve net zero emissions. They are not only responsible for managing data and information related to carbon emissions, but also for providing sustainability reporting which will help oil and gas companies understand the impact of their operations on the environment. Accountants can provide accurate and reliable information

implementing changes towards more sustainable operations.

BIBLIOGRAPHY

- Aprilianto, R. A., & Ariefianto, R. M. (2021). Peluang dan tantangan menuju net zero emission (NZE) menggunakan variable renewable energy (VRE) pada sistem ketenagalistrikan di Indonesia. *J. Paradig*, 2(2), 1–13.
- Fauzi, P. R. (2023). Peluang Dan Tantangan Transisi Energi: Implikasi Kebijakan Pasca Presidensi G20 Indonesia. *MUC Tax Journal*, 1(1), 16–34.
- Janitra, A., Sasanti, E. E., & Hudaya, R. (2023). ANALISIS METODE ALTMAN DAN ZMIJEWSKI DALAM MEMPREDIKSI POTENSI FINANCIAL DISTRESS PADA PERUSAHAAN MINYAK DAN GAS YANG TERDAFTAR DI BURSA EFEK INDONESIA PERIODE 2016-2020. *Jurnal Riset Mahasiswa Akuntansi*, 3(2), 162–169.
- Jones, P. D., & Wigley, T. M. L. (1990). Global warming trends. *Scientific American*, 263(2), 84–91.
- Lindsay, R., & Martella, R. (2020). *Corporate Social Responsibility–Sustainable Business: Environmental, Social and Governance Frameworks for the 21st Century*. Kluwer Law International BV.
- Mahardika, D. P. K. (2020). Meninjau Peran Akuntan dalam Menanggulangi Isu Perubahan Iklim. *Jurnal Akuntansi Multiparadigma*, 11(3), 581–599.
- Pratama, R., & Parinduri, L. (2019). Penanggulangan pemanasan global. *Buletin Utama Teknik*, 15(1), 91–95.
- Rahayu, T., Syafril, S., Wekke, I. S., & Erlinda, R. (2019). *Teknik menulis review literatur dalam sebuah artikel ilmiah*.
- Ramadan, A. (2022). *Analisis Corporate Governance dan Karakteristik Perusahaan terhadap Publikasi Sustainability Report pada Perusahaan di Bursa Efek Indonesia*. Prodi Akuntansi.
- Sariman, S., & Akbar, I. A. (2022). Perencanaan Pembangkit Listrik Tenaga Surya Pada Komplek Perumahan Naskah Indah II, Kecamatan Sukarami Palembang. *Syntax Idea*, 4(2), 434–442.
- Sindhvani, R., Singh, P. L., Behl, A., Afridi, M. S., Sammanit, D., & Tiwari, A. K. (2022). Modeling the critical success factors of implementing net zero emission (NZE) and promoting resilience and social value creation. *Technological Forecasting and Social Change*, 181, 121759.
- Soares, N., Martins, A. G., Carvalho, A. L., Caldeira, C., Du, C., Castanheira, É., Rodrigues, E., Oliveira, G., Pereira, G. I., & Bastos, J. (2018). The challenging paradigm of interrelated energy systems towards a more sustainable future. *Renewable and Sustainable Energy Reviews*, 95, 171–193.
- Sung, Sa. Y., & Choi, J. N. (2012). Effects of team knowledge management on the creativity and financial performance of organizational teams. *Organizational Behavior and Human Decision Processes*, 118(1), 4–13.
- Suyitno, B. M. (2022). *Rekayasa Sistem Energi Nasional*.
- Syofiyardi, S., Riyadiyanto, R., & Maisarah, S. (2022). Biodiversity in PT Pertamina Patra Niaga Fuel Terminal Sei Siak Mor 1 Sumbagut. *International Journal of Social Service and Research*, 2(12), 1299–1309.
- Van der Veeken, H. J. M., & Wouters, M. J. F. (2002). Using accounting information systems by operations managers in a project company. *Management Accounting Research*, 13(3), 345–370.

- Vega-Araujo, J., & Heffron, R. J. (2022). Assessing elements of energy justice in Colombia: A case study on transmission infrastructure in La Guajira. *Energy Research & Social Science*, 91, 102688.
- Annur, Cidy Mutia. (2023). Daftar Perusahaan Minyak dan Gas Terbesar Dunia 2023, Ada dari Indonesia?. <https://databoks.katadata.co.id/data-publish/2023/08/14/daftar-perusahaan-minyak-dan-gas-terbesar-dunia-2023-ada-dari-indonesia>. Diakses pada 13 Oktober 2023.
- Apexindo, (2022). Laporan Keberlanjutan. <https://www.apexindo.com/Media/Default/SR/Apexindo%20Sustainability%20Report%202022.pdf>. Diakses pada 17 Oktober 2023.
- Elnusa. (2023). Tekan Emisi Karbon, Elnusa Lakukan Berbagai Langkah Green Action. <https://www.elnusa.co.id/tekan-emisi-karbon-elnusa-lakukan-berbagai-langkah-green-action>. Diakses pada 17 Oktober 2023.
- MedcoEnergi. (2022). Laporan Keberlanjutan. <https://www.medcoenergi.com/id/subpagelist/view/35>. Diakses pada 17 Oktober 2023.
- Nisaputra, Rezkiana. (2022). Peran Akuntan Mitigasi Perubahan Iklim Global dengan Pelaporan Keberlanjutan. <https://infobanknews.com/peran-akuntan-mitigasi-perubahan-iklim-global-dengan-pelaporan-keberlanjutan/>. Diakses pada 13 Oktober 2023.
- Nurdin, S. (2023). Mengenal Net Zero Alias Nol Emisi Karbon. Viva.co.id. <https://www.viva.co.id/edukasi/1597533-mengenal-net-zero-emissions-alias-nol-emisi-karbon>. Diakses pada 13 Oktober 2023
- Pratama, R., & Parinduri, L. (2019). Penanggulangan pemanasan global. *Buletin Utama Teknik*, 15(1), 91-95.
- PT AKR Corporindo. (2022). Laporan Keberlanjutan. <https://www.akr.co.id/storage/reports/Gj67fyqODBFV8ngNRnrxBG7c69K6ntKQJ1yx3teT.pdf>. Diakses pada 17 Oktober 2023
- PT Energi Mega Persada. (2021). Laporan Keberlanjutan 2021. <https://www.idx.co.id/StaticData/NewsAndAnnouncement/ANNOUNCEMENTSTOCK/From EREP/202206/deda160de4196922adfl.pdf>. Diakses pada 17 Oktober 2023
- PT Perusahaan Gas Negara. (2022). Laporan Keberlanjutan. [https://ir.pgn.co.id/AssetFiles/Financial/Sustainability/laporan keberlanjutan 2022.pdf](https://ir.pgn.co.id/AssetFiles/Financial/Sustainability/laporan%20keberlanjutan%202022.pdf). Diakses pada 17 Oktober 2023
- PT Rukun Raharja. (2022). Laporan Tahunan 2022. <https://www.raja.co.id/cfind/source/files/annual-report/ar%20raja%202022%20final.pdf>. Diakses pada 17 Oktober 2023

Copyright holder:

Yanuar Ramadhan, Erma, Maulana, Melinda, Samuel, Suryanto (2023)

First publication right:

Asian Journal of Engineering, Social and Health (AJESH)

This article is licensed under:

