“Sustainable Growth Through Green Financing: Evaluating K-Electric Path Toward Renewable Energy”

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Bachelors of Business Administration (BBA)

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Bahria University Islamabad

Fall 2025

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December 16,2025

TO WHOM IT MAY CONCERN:

Dear Concerned,

This is to certify that this project report, entitled **"Sustainable Growth Through Green Financing: Evaluating K-Electric's Path Toward Renewable Energy"**, prepared by **Haneen Musa (01-111221-034)** and **Haniya Qureshi (01-111221-035)**, submitted in partial fulfilment of the requirements for the degree of **Bachelor of Business Administration** at **Bahria University, Islamabad Campus**, during the academic year 2026, is a Bonafide record of original work carried out under my supervision and guidance.

Best Regards,

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Executive Summary

This study focuses on how green financing contributes to the sustainable development and renewable energy armament of K-Electric, the sole vertically integrated privately owned power utility in Pakistan. As the environmental pressures mount, the energy demand grows, and the country is heavily dependent on fossil fuels, the power sector of Pakistan is under intense pressure to become more sustainable and greener in energy consumption. Green financing in this case has come out as a significant financial tool, which allows firms to invest in renewable energy without compromising the financial health.

The main purpose of this research is to see the role that green financing programs play in the financial performance and future sustainability of K-Electric. The study is devoted to the examination of the profitability, liquidity, leverage, and sustainability ratios of the company between 2017 and 2023. It has assumed a quantitative and descriptive research design with the secondary data being the audited annual reports and sustainability disclosures of K-Electric. Financial performance has been evaluated using financial ratio (Return on Assets, Return on Equity, Debt-to-Equity ratio, Current Ratio and Profit Margin). Moreover, other sustainability indicators that have been discussed include the renewable energy development and the intensity of sustainability expenditure, to see how the company is dedicated to green investment.

The research results demonstrate that the financial performance of K-Electric has been erratic within the period chosen because of the changes in fuel prices, regulatory delays, and the liquidity. Nevertheless, the analysis also reflects a slow increase in sustainability practices, especially since 2021, as a greater number of resources are invested in renewable energy, net-metering growth, and sustainability-related expenditures are increasing. Although these initiatives are yet to translate into the short-term profitability consistency, they are creating operational resilience and less environmental risk in the long term.

From a practical perspective, the findings offer useful insights for policymakers, regulators and energy stakeholders. The results indicate that structured green financing mechanisms can help power utilities like K-Electric attract long-term capital for renewable energy projects while

reducing dependence on imported fuels. Additionally, the study provides managerial implications by highlighting the importance of integrating sustainability expenditure into core financial planning, strengthening liquidity management, and improving ESG disclosures to enhance investor confidence and access to green financial instruments.

The paper arrives at the conclusion that green financing does support the shift of K-Electric to sustainable energy through providing an opportunity to invest in renewable sources and enhancing the ESG preparedness. Further to make the project sustainable in its growth, it is proposed that the project should intensify the liquidity management, hasten renewable energy procurement, enhance sustainability reporting, and consider concessional and blended financing. In general, the project demonstrates that green financing is not only a regulation that the K-Electric has to face but also a measure to attain long-term financial stability and environmental sustainability.

Chapter 1

Introduction

1.1 Background

The concept of sustainable development has become the major focus of modern business strategy as the profitability and environmental responsibility become a rising priority among the companies. It focuses on the long-term development of the economy that safeguards the natural resources to the future generation. Within the shifting environment green finance has become the necessary force of sustainable change as it directs capital into projects including renewable energy, energy efficiency and low-carbon infrastructure.

The market of green finance has been booming all over the world, with the volume of green bonds being issued in the past several years becoming very high. Business entities and governments are using financial instruments such as green bonds, climate funds, and sustainability-linked loans to support their operations in support of global sustainability goals such as the Paris Agreement and the United Nations Sustainable Development Goals. Not only does the adoption of green financing contribute to environmental safety but it also improves competitiveness of the organization and instills confidence in the stakeholders.

Green financing is however, challenging in developing countries because of poor regulatory frameworks, less awareness, and poor institutional capacity by the investors. Pakistan is no exception. It has a very high dependency on imported fossil fuel in its power sector, which results in high cost of generation, circular debt and environmental degradation. To overcome them, the State Bank of Pakistan established Green Banking Guidelines to stimulate the investments in renewable and sustainable projects. Nonetheless, there is a low rate of adoption at the corporate level and the incorporation of green finance in decision-making is still in its infancy.

The only exception with a significant one being K-Electric, the single vertically integrated power utility of Pakistan. The company has over 3.4 million customers in Karachi and its environs and it has started integrating renewable energy initiatives, solar and wind among others into its portfolio. Although the sustainability vision of K-Electric is consistent with the international trends of

decarbonizing the world, the percentage of reuse and the mechanisms of funding are rather reliant on the traditional sources. Sustainability reports indicate clean energy programs, but they are not empirically analyzed in terms of how green finance contributes to the sustainable development of green energy and renewable transition.

The case study of K-Electric provides a chance to learn how financial innovation can contribute to the sustainability of corporations in the energy industry in Pakistan. Another gap filled in this research is the fact that, most of available literature on green finance in Pakistan is based on banking or macroeconomic policy whereas the research on firm-level application of green financial instruments is not common. This research paper will address that gap by asking how green financing can help K-Electric to change over to renewable energy and sustainable development.

1.1 Gap Identification

Although green finance has received much debate internationally as a boosting factor to sustainable development, it has not been fully utilized in the developing economies such as Pakistan. Majority of the international studies have examined the role of green finance in the mature economies such as China, the European Union as well as the United States where well established regulatory frameworks, well developed capital markets and the participation of institutional investors have enabled the shift to renewable energy.

On the other hand, most scholarly studies in Pakistan have focused on macro-level policy studies, e.g. the green banking practices by the State Bank of Pakistan or the national energy policy. Despite the importance of such studies to comprehend regulatory progress, they rarely address the dynamics at firm level of how certain corporations apply green finance, what is the difficulty in doing so, and what is the measurable impact of green financing on the sustainability of corporations.

Also, in the energy industry, there is a significant deficit of empirical sources on the issue of financial innovation integration into renewable transition in power utility. Although K-Electric has paid more attention to sustainability, no specific studies investigate the aspects of green financing and sustainable developmental direction. Therefore, researchers and practitioners do not have

contextual information on the use of financial mechanisms towards the achievement of renewable transformation in the Pakistani private energy industry.

This study provides a solution to that knowledge gap with specific consideration of the experience of K-Electric as a case study to bridge the connection between the notions of green finance, renewable energy investment, and corporate sustainability performance.

1.2 Why this Gap Exists

The lack of literature available on the concept of green finance and sustainable development at the firm level in the Pakistani energy industry is mostly explained by a set of data, disclosure, and analysis constraints.

To begin with, sustainability-linked investments have not been disclosed by the corporate and financial reporting systems of Pakistan. The majority of the energy companies, such as private utilities, fail to explicitly segregate green or renewable investments and total capital expenditures listed in the official financial statements. This complicates efforts by researchers to identify and examine the aspects of green-finance like concessional loans, sustainability-related credit lines, or carbon-reduction investments.

Two, even though regulations that sustainability principles of banks should follow have been implemented, they are rather adopted based on complying with the policies instead of measurable outcomes. This implies that no uniform signs or data exist which can connect green finance with the performance of firms, restricting the empirical research of the financial implications of green finance.

Third, current scholarly literature on sustainability in Pakistan has been either qualitative or policy-oriented, and discussed environmental considerability, CSR, or energy policy formulations. Very few researchers have relied on financial-ratio or trend analysis when determining the impact of sustainability financing on profitability, capital structure, or investment efficiency. This

methodological gap has limited information on the financial sustainability of the green financing models.

Fourthly, there is limited availability to reliable time-series information. Single utilities such as K-Electric are likely to publish unfinished or summarized sustainability information without associating it to particular financial tool or performance metrics. Without such a fit, there is little empirical research that has tested the financial effects of green activities.

Finally, the failure to cooperate with the main stakeholders has not allowed developing standardized frameworks to ensure the study of sustainable finance at the corporate level. In turn, it does not have an in-depth financial discussion to illustrate the relationship between green financing and profitability and long-term growth of energy companies.

Combined, they are why the relationship between green finance and corporate sustainable development namely through the energy utilities in Pakistan has not received sufficient research. To fill this research gap, a research that encompasses both financial analysis and sustainability appraisal is required as explained in the next section.

1.3 How This Research Fills the Gap

To fill the stated gap of the scarcity of firm-level financial data on the topic of green financing in the energy sector in Pakistan, this paper concentrates on the specific K-Electric (KE) as case analysis. It integrates financial analysis, trend analysis, and strategic analysis to establish the role played by the green financing in the renewable energy transformation of KE and its general sustainable development.

1.4.1 Financial Analysis of K-Electric's Sustainability Investments

In this paper, a systematic financial analysis of the financial and sustainability reports of K-Electric since 2017-2023 will be conducted to understand the changes in the capital structure of the company and its investment choices with its renewable energy projects.

The analysis will:

- Find the sources of green financing like the concessional loans, sustainability based credit or development partner funding.
- Measure the impact of these financing modes on profitability (ROA, ROE), liquidity and debt ratios.
- Make a comparison between the pre- and post-renewable financing trends to ascertain whether the implementation of green finance is associated with an increase in financial efficiency and energy diversification.
- Determine the impact of renewable investments on long-term solvency and cost of capital, and connect sustainability objectives and financial feasibility.

This financial data will prove the measurable interdependence between green financing and corporate performance that will help fill the gap between the claims of sustainability and the real business performance numbers.

1.3.2 Evaluation of Financial Decision-Making and Investment Priorities

Besides numerical analysis, the study will discuss the role of financial decision-making in facilitating or constraining the renewable transition of K-Electric. It will examine investment priorities of the company, its risk management and cost and benefits of green projects.

This includes:

- Analyzing annual reports, financial releases, and investment briefs to determine the patterns of capital investment on clean energy.
- Assessing the economic justification in choosing a project, that is, are renewable projects undertaken as a regulatory measure, to reduce operational costs, or long-term sustenance.
- Analysis of management commentary and communication with investors in order to see how sustainability is positioned as a financial opportunity instead of a cost.

This section will provide the explanation of why and how financing decisions are made giving an idea whether sustainability is part of the financial planning process of K-Electric or it is peripheral.

1.3.2 Bridging the Gap Through Integrated Financial Insight

In contrast to the previous literature, which talks about green financing in a theoretical or policy background, the current study generates firm-level data-based understanding. It integrates the quantitative financial analysis and qualitative interpretation of investment decisions to provide a complete picture about how sustainable financing has the potential to enhance business.

This study therefore fills the research gap by:

- Correlation of green finance and financial performance (profitability, liquidity, leverage).
- Key points The application of financial strategies to scale up the transition toward renewable energy within a private utility.
- To recommend some practical advice on how to increase the financial sustainability of green projects in corporate energy industry in Pakistan.

The results will assist in determining a financial roadmap of how companies such as K-Electric may combine profitability with sustainability and also make both scholarly and practical contributions to the area of green finance.

1.4 Problem Statement

Sustainability of energy has become an international necessity; and, however, such nations as those of Pakistan that symbolize the developing economies, are still grappling with the financial processes that will enable them to sustain this transition. Even though, the concept of green financing is broadly identified as a contributor to sustainable development, its penetration in the corporate energy sector of Pakistan is insignificant. Fossil fuels continue to dominate the energy mix in the country which has led to high cost of generation, energy insecurity and massive environmental degradation.

Pakistan has one vertically integrated privately owned power utility company K-Electric (KE) that made the decision of becoming more renewable and sustainable. Nonetheless, the company still largely depends on the traditional generation, and few indications can be made as to how green financial instruments are impacting the process of renewable energy transformation. The majority of available studies conducted in Pakistan regard the policy frameworks or initiatives of the banking-sector without looking at firm-level strategies and mechanisms of how companies implement sustainable finance.

The absence of empirical evaluation generates a knowledge gap that is critical in comprehending how green financing and corporate sustainable growth are related to each other in the Pakistani context. Devoid of such revelations, the decision-makers encounter a problem in establishing efficient strategies, which can incorporate financial innovation and sustainability goals. In that regard, this study will be used to determine how the concept of green financing can influence sustainable development of K-Electric and its transition to renewable energy sources, what are the obstacles, opportunities, and financial solutions that can help such corporations become sustainable.

1.5 Research Objectives

The key aim of this project is to investigate the impact of green financing in the sustainable development and renewable energy transition of K-Electric. To reach this larger purpose, the following objectives are considered in the study:

- K-Electric's financial performance will be analyzed using profitability, liquidity and leverage ratio.
- To assess how green financing can be used to fund the renewable energy investments of K-Electric.
- To determine the effect of sustainability programs on the long term financial and operational expansion of K-Electric.
- To investigate the impact that the sustainability-related financial decisions have on the preparedness of the company to the future green financing opportunities.

1.6 Significance of the Study

This research has merit in that it will add value to the field of literature and practice by providing understanding on how green financing triggers green growth in the energy sector of Pakistan. Financial innovation is more and more associated with environmental sustainability, and therefore there is an urgent necessity to look into how financial innovation may help companies to move towards greener sources of energy.

1.6.1 Academic Significance

Scholarly, the study fills a major gap in existing literature, which has dedicated itself to the policy or banking nature of green finance more than how it can be applied in the corporate financial level. This study offers empirical evidence on the impacts arising due to the green financing approach on the financial stability, profitability, and returns on a renewable energy investment of a firm based on a review of the financial reports, investment trends, and sustainability reports of the K-Electric firm.

Moreover, it broadens the theoretical basis of the relationship between financial performance and sustainability performance showing that green financing may be regarded as a long-term strategic investment instead of a compliance measure. The study thus forms a basis on how a further research should be conducted on finance to sustainability nexus in emerging economies where economic and environmental goals should go hand in hand to realize the inclusive growth.

1.6.2 Practical Significance

On a practical level, this study is especially useful to both the corporate leaders, financial institutions and policymakers. In the case of the K-Electric as a private utility, the research offers evidence-based perspectives on how the introduction of the green financial instruments such as the sustainability-linked loans, concessional credit facilities, and green bonds could lower the costs of operation, diversify the financing sources, and improve the reputation of the business. It shows that environmental integrity and financial profitability do not always have to be opposite goals.

To investors and banks, the study provides insight into how to formulate funding products in a manner that they support the corporate sustainability objectives, hence contributing to the green economic agenda in Pakistan. It also demonstrates how corporate level regulatory structures may be converted into concrete financial and environmental performance.

The policy level can use the findings to inform national policies on the financing of renewable energy and sustainable development of industries. They offer practical recommendations to the institutions like NEPRA and the Ministry of Energy regarding the development of incentive regimes, credit framework, and reporting procedures that will promote the involvement of the private-sector in the renewable projects.

1.6.3 Social and Environmental Significance

Besides financial and academic meaning, this study has more social and environmental value. Pakistan is one of those countries in the world that are highly susceptible to climatic conditions, and the energy sector in this country must be reformed to enable environmental sustainability. This study contributes to the global sustainability goals such as affordable clean energy and climate action considering the identification of the ways in which financial mechanisms can speed up the implementation of renewable energy.

It stresses the fact that sustainable finance is not only a business idea but a national priority one that helps to create cleaner air, lower emissions, and better living conditions of the local population. As a result, the results of this study will create awareness on the real benefits of making decisions regarding financial issues in accordance with sustainability objectives among industries, financial establishments, and governmental agencies.

1.7 Summary of Chapter

There is a wide gap between Pakistani power sector, especially K-Electric, in terms of financial sustainability. However, in spite of all the constant green efforts, policy incentives and even individual commitments, no serious financial analysis has been done to ascertain whether green financing indeed motivates K-Electric in its movement towards sustainable development.

The purpose of the study in this regard is to provide this gap by using financial analysis to analyze the patterns of investment, financing source and profitability trends of the K-Electric in the frame of the renewable energy programs. In this way, the study will have clear findings regarding the financial performance of the company, its dedication to the green transformation, and the efficiency of sustainable financing in the sphere of private energy in Pakistan.

Chapter 2

Literature Review

Green financing is a key tool that has become important in supporting the idea of sustainability and facilitating energy transitions in the emerging economies. Green finance is quite timely in the case of Pakistan, as on the one hand, the rate of environmental degradation, energy demand, and the risks posed by climate conditions have put the power sector of the country in the spotlight of sustainable development. Multiple reports record that green finance or what can be generally referred to as investments in green energy, energy saving, and other environmentally friendly projects has a quantifiable effect on environment sustainability due to mobilization of financial flows towards the low-carbon infrastructure. Mehmood and Kamal (2025) reveal empirically that investment in renewable energy, energy efficiency, and green bonds are strongly related with minimization of pollution and emissions in Pakistan, still institutional, regulatory, and infrastructural barriers exist.

In addition to this, a study of the institutional and policy setting of green financing in Pakistan accentuates the maturing but immature ecosystem of green finance. As Nasir, Ahmed and Basharat (2024) explain, the green banking guidelines by the State Bank of Pakistan, the recent efforts by Pakistan Stock Exchange and other regulatory bodies are examined with regards to capital mobilization towards sustainable projects.

On the same note, the Sustainable Development Policy Institute has its priorities: despite the existence of policy frameworks, more de-risking instruments, enhanced capacity of financial institutions, and clarity of environmental standards are needed to accelerate green investments.

This can be especially applied in the energy sector where green finance is a very important factor in such macro-level analyses. In the energy arena, other authors including Khan, Ahmed, and Shabbir (2024) explore the role of domestic and foreign sources of finance to the renewable energy potential in Pakistan by assigning to the role of green energy funding the same economic significance as the necessity of achieving the sustainable development targets is an ecological requirement.

To be more general, the works in South Asian countries, such as Pakistan, demonstrate that green finance, foreign direct investment, and the use of renewable energy can positively affect the quality of the environment and decrease ecological footprints.

K-Electric (KE) is a real-life and exemplary case on how green finance can help in achieving sustainable growth in a utility setting against this policy and academic backdrop. KE has publicly pledged to incorporate 30% of renewable energy in its generation by the year 2030.

Its flag project is a 220 MW hybrid solar-wind in Dhabeji which is thought to be big move since it does not only show the interest of KE in changing to green but also attracts FDI of approximately US 200 million on quite favorable conditions in terms of tariffs.

This project according to KE sustainability report will save the company a lot of carbon emissions and will help lead to the creation of economic savings and foreign exchange savings as well. However, the green path taken by KE has its critics and dangers. According to commentators, KE has long neglected to invest in renewables with the opportunities to reduce their significant expenses. Regulatory and tariff risk is a concern as far as a policy point of view is concerned. Moreover, KE has been involved in socially inclusive green financing programs: e.g., as a CSR initiative led by NEPRA ("Power with Prosperity"), KE collaborated with Akhuwat, a microfinance institution, and Engro to offer interest-free microfinance to underserved families to install solar panels, demonstrating that financial innovation and social goals can be combined.

In a wider policy perspective, the role of green finance in energy transition in Pakistan is twofold: on the one hand, there are immense opportunities, but on the other hand, the financial market is immature, a variety of products such as green bonds and loans is limited, and the institutions cannot deliver as much as it is possible. The SDPI report claims that there is a need to be more aggressive in policy design to de-risk green investments, such as blended finance, incentive frameworks that open up private capital.

The request within the particular literature on energy-financing is to mobilize superior mechanisms to invest local and foreign capital in renewable ventures using structured instruments that meet the risk profile of Pakistan.

Technical and regulatory research also suggest that besides funding, incorporation of renewables to the grid in Pakistan will entail policy instruments like net-metering. Recent activity, such as that by Aydinov, Malkoot and Al-Ashri (2017), examines the need to maximize the net metering policy to encourage distributed generation in Pakistan which would effectively supplement the KE large-scale generation plans.

In the meantime, the empirical study regarding the macro financial aspect indicates that green finance is closely connected with renewable energy capacity, but its application might have varying results because of the institutional maturity and regulatory confidence. Overall, the literature portrays an ardent yet optimistic situation whereby green financing has been increasing in Pakistan based on policy measures and green banking and emerging financial instruments; the utilities such as K-Electric are proactively incorporating green capital in renewable energy plans. Nevertheless, to scale this growth, it needs to have stronger de-risking systems, regulatory consistency and novel financial structure that can absorb risk, generate environmental and economic returns. The relevance of your study, namely, that it discusses the green financing strategy of KE, the risks of the strategy, and its outcomes, is thus quite evident since it will enable the policy discussion to become more empirical, and the institutional design to be informed, as well as the ways a green finance can be implemented in the electricity sector of Pakistan to lead to actual change.

Chapter 3

Methodology

3.1 Introduction

This chapter explains the research methodology that will be utilized in the paper titled Sustainable Growth Through Green Financing: Evaluating the Road K Electric is taking to Renewable Energy. This chapter is aimed at clearly stating how the data were collected, analyzed and interpreted so as to accomplish the research objectives. An effective research methodology is the key to the credibility, accuracy and reliability of the research findings. The chapter points to the research design, data selection and collection processes, and the reason why these processes have been selected.

A systematic and organized research method has been used since the research aims at the analysis of not only financial performance but also sustainability indicators of K Electric during a period of years. The approach adopted to carry out this research enables the assessment of sustainable growth, the investment in renewable power sources as well as the green financing schemes based on quantifiable and testable data. This will make sure that the inferences made in the study are well supported by empirical evidence as opposed to personal views and expectations.

3.1 Research Design

The type of research design that will be employed in this study is a quantitative descriptive and analytical type of research design. Quantitative research design is the most appropriate one as the entire study will be based on the numerical data gathered through annual financial statements and sustainability reports of K Electric. The above numerical values can be used to compute financial ratios and sustainability performance indicators effectively.

The descriptive component of this research design assists in explaining the sustainability efforts of K Electric, renewable energy sources investments, and green financing efforts in systematic form. Simultaneously, the analytical method can be used to perform the in-depth analysis of the trends in profitability, liquidity, financial stability, and sustainability performance. It is also a longitudinal research study because the data is gathered and analyzed over a number of years. This multi-year analysis assists in determining the trends, change, and shortcoming of the financial and sustainability performance of K Electric over the years.

The research is not survey-based, interview-based, and does not include any experimental approach since the task is not to study the behavioral patterns but to assess the financial and sustainability performance using the secondary data. Hence, the quantitative, descriptive and analytical research design will be the best fit in this research.

3.2 Data Selection and Collection

This research paper applied the entire secondary data, implying that all data has been acquired using already published and proven sources. The main data are the Annual Reports of K Electric of 2017-2023 and the Sustainability Reports of 2016-2023. These reports have been gathered on the official site of K Electric and other legitimate corporate publications.

The annual reports contained financial reports about the total assets, money invested in the company by the shareholders, total debt, current assets, current liabilities, net income and the net revenue. Key financial ratios were then created using these values such as Return on Assets, Return on Equity, Current Ratio, Debt to Equity Ratio and Profit Margin. Conversely, the sustainability reports gave details in the area of CSR and sustainability expenditures, renewable energy potential, water consumption, waste generation, environmental endeavors, and community improvement initiatives.

Other data pertaining to power generation mix, renewable energy initiatives and transmission infrastructure were gathered through official regulatory reports and company reports. The data has been gathered through manual means by examining each report closely and taking out the corresponding figures on a year to year basis. All the information that was extracted was organized in table format using the Microsoft Excel to make the financial and sustainability indicators calculations accurate.

The secondary data is very reliable since the published reports are audited and officially proven. It is also capable of analyzing the long term trends at a significantly lower cost and time than primary data collection does.

3.3 Measurement of Variables

In this study, financial performance is gauged by financial ratios that are commonly accepted and represent profitability, liquidity and leverage. The ratio of Return on Assets (ROA) helps in evaluating the level of efficiency with which K-Electric is utilizing its asset base to make profits, something that is critical when a company like K-Electric is a capital-intensive utility. Return on Equity (ROE) is a measure of the return rate to the shareholders and the effectiveness of the equity capital.

The Debt-to-Equity ratio is to analyze the financial risk of the company and the reliance on borrowed money as an investment on infrastructure and renewable energy. Current Ratio assesses the short-term liquidity status of a firm by comparing the current assets with current liabilities; which shows the capacity of the firm to meet its short-term financial commitment. Profit Margin Measures the efficiency of cost management in the company and its overall profitability in fluctuating economic and fuel price conditions.

Such indicators like Sustainability Expenditure Intensity (SEI) and renewable energy growth are used to evaluate sustainability performance. SEI compares spending on sustainability and CSR to revenue to enable comparison between years of various sizes. The trend of renewable energy development and renewable portion in the production mix shows how fast K-Electric is shifting towards the cleaner sources of energy and how it corresponds to the goals of sustainability and green financing.

3.3.1 Formulas Used in the Study

This paper employs standard financial and sustainability formula to provide consistency, comparability and reliability of findings during the chosen time period. The formulae employed are all common in the literature of financial analysis and sustainability assessment. The formulae were used consistently on annual data based on data collected on K-Electric annual reports on sustainability and annual reports on auditing.

Financial Performance Indicators:

1. Return on Assets (ROA)

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100$$

2. Return on Equity (ROE)

$$\text{ROE} = \frac{\text{Net Income}}{\text{Shareholders' Equity}} \times 100$$

3. Debt-to-Equity Ratio (D/E)

$$\text{D/E} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}}$$

4. Current Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

5. Profit Margin

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Revenue}} \times 100$$

Sustainability Indicators:

6. Renewable Share of Generation Mix (%)

$$\text{Renewable Share} = \frac{\text{Renewable Capacity}}{\text{Total Installed Capacity}} \times 100$$

7. Sustainability Expenditure Intensity (SEI)

$$\text{SEI} = \frac{\text{CSR/Sustainability Spending}}{\text{Revenue}} \times 100$$

8. Water Intensity (m^3/MWh)

$$\text{Water Intensity} = \frac{\text{Total Water Consumption}}{\text{Electricity Supplied}}$$

9. Waste per Employee

$$\text{Waste per Employee} = \frac{\text{Total Waste}}{\text{Number of Employees}}$$

10. Emissions Intensity (gCO_2/kWh) *(available from FY22 onward)*

$$\text{Emissions Intensity} = \frac{\text{Total Emissions}}{\text{Electricity Generated}}$$

3.6 Data Analysis Procedure

Secondary data was analyzed based on published annual reports and sustainability disclosures of K-Electric that are audited and date back to the year 2017 to 2023. Sustainability indicators and financial ratios have been determined year by year on the basis of standardized formulas. The obtained values were presented in the form of tables to compare them with each other in varying years and trace the tendencies of financial and sustainability performance.

The interpretation of the results was carried out using a descriptive analytical approach. The differences and the patterns of the ratios and sustainability indicators were discussed in the frames of the regulatory environment, fuel prices dynamics and renewable energy programs.

3.7 Justification of Methodology

The case study is K-Electric as it is the sole vertically integrated privately owned power utility in Pakistan and it has a key position in the energy market of the nation. The current actions of the company to use renewable energy and other sustainability-related projects result in it being a good subject to explore the importance of green financing in sustainable development.

Secondary data was applied because of availability of reliable and audited financial statements and sustainability reports, which assure accuracy and consistency of information within a span of years. The financial ratio analysis was used because it is one of the most popular and efficient techniques of corporate financial performance assessment and a comparison of the trends with time. Also, sustainability indicators were included in order to attain the environmental aspect of performance, a more all-inclusive determination that would be consistent with the study purpose.

3.8 Reliability and Validity

Minimization of risks of inaccuracy was done through the use of audited financial statements and official ESG reports. The application of formulae was done uniformly and cross validation of figures was done in various parts of annual reports. The validity was supported with the choice of indicators which are related to such theoretical constructs as profitability, liquidity, leverage, and sustainability performance. Though no causality could be applied because of the nature of the study as an observation, triangulation of independent indicators reinforced the validity of

interpretations. The external validity is enhanced by the application of the globally accepted financial and sustainability indicators.

3.9 Ethical Considerations

All information used in the paper has been sourced in publicly available audited sources and therefore does not lack transparency or ethical integrity. No secrets or property information was accessed. Manipulated standardized accounting formulas were used to calculate without manipulations and interpretations were drawn using only verifiable evidence. The best of the practices of professional academic citation were observed and all analyses are based on the principles of honesty, objectivity and integrity of data.

Chapter 4

Research Findings

4.1 Introduction

The chapter is a thorough interpretation of financial and sustainability outcomes of the performance of K Electric in a 7-year horizon (FY2017-2023). Although the previous chapters presented the methodology framework and reasoning behind the study, the current chapter uses those analytical instruments to calculate and assess relevant financial ratios, corporate sustainability measures, and integrated trends, which demonstrate the direction K-Electric is taking to move towards sustainable growth. The analysis provides a multi layered evaluation of profitability, liquidity, leverage, and operational efficiency and at the same time how the adoption of sustainability, in this case, renewable energy efforts and institutionalization of ESG, are interconnected with financial performance.

Pakistan is a power sector that is regulated within a tariff environment with chronic structural problems such as circular debt accumulation, inefficient cost pass through arrangements, heavy reliance on imported fossil fuels, and intermittent demand trends. Due to such systemic constraints, financial ratios tend to be volatile and not only due to the performance of the company but also due to macroeconomic and regulatory pressures. In this way, the interpretation in the chapter is not limited to numerical computation: it puts each indicator into the context of operational environment, regulatory environment, and sustainability investments of K Electric.

This book is divided into six chapters. Section 4.2 is a summary of the evidence base and analytical context. Section 4.3 shows the ratio based financial performance and explains the change in performance in terms of profitability, liquidity, solvency and margin factors. In section 4.4, the performance of sustainability is measured based on CSR expenditure, renewable movement, water intensity, and ESG maturity. Section 4.5 merges both financial and sustainability results to determine the level to which sustainability adds or interacts with the financial performance. Section 4.6 builds an elaborate pre and post sustainability analysis. Section 4.7 provides the managerial implications and sensitivity considerations. At the end of the chapter, the main conclusions are summarized to establish the basis of the recommendations and end conclusions.

4.2 Overview of Data and Analysis Framework

All the values relied on in calculation of ratios have been taken out of audited annual reports that K-Electric published between the periods of FY-2017 and FY-2023. These reports have given uniform and reliable data on assets, equity, debt, revenue, current assets, current liabilities and net income- allowing proper calculation of Return on Assets (ROA) and Return on Equity (ROE), Debt to Equity (D/E), Current Ratio and Profit Margin.

The indicators of sustainability have been obtained based on Sustainability Reports of K-Electric (2016,2019, 2021 and 2022 and 2023). There was no sustainability report, specifically designed on sustainability, published in the FY-2020, though, pertinent ESG information can be found on the Annual Report 2020. Being a regulated utility, KE disclosures will capture industry-related aspects of operations realities tariff determination by NEPRA, fuel price dynamics, and circular debt, among other factors, which have a significant influence on financial performance and should be considered when interpreting.

The research paper is longitudinal in scope to understand the trends, turning points, and structural changes, specifically focusing on the 2020 pandemic shock, the transition to institutionalization of ESG, and the growing intensity of sustainability spending after 2021. When combined, these data can be used to have a multi-dimensional reflection on the financial and sustainability development of KE.

4.3 Financial Performance Analysis

In this section, the results of financial performance of K-Electric during the period, 2017-2023 are presented based on the key financial ratios. The table below summarizes the ratios used to assess the profitability, liquidity and leverage of the company and represents quantitative data of the financial status of the company over the years. The results are the foundation of the evaluation of the interaction between the financial stability and the sustainability and green financing efforts.

Year	ROA	ROE	Debt to Equity	Current Ratio	Profit Margin
2017	3.29%	9.52%	1.55%	1.00%	7.08%
2018	4.85%	15.0%	1.74%	0.95%	10.58%
2019	5.50%	15.36%	1.79%	0.91%	11.39%
2020	-0.54%	-1.82%	2.34%	0.89%	-1.33%
2021	1.59%	5.68%	2.62%	0.81%	4.09%
2022	2.47%	10.49%	3.24%	0.91%	5.06%
2023	0.47%	1.92%	3.02%	0.54%	0.94%

4.4 Financial Results Interpretation (2017–2023)

This will be a detailed interpretation of the financial ratios of K-Electric between 2017 and 2023. The objective is not merely to report on the numerical trends but to demonstrate what the trends say about what the company was doing in its pursuit to sustainability in growth. Each ratio is examined within operational realities which include circular debt pressures, fluctuation in fuel prices, accumulation of receivables and regulatory delays. Connecting the financial performance to the following underlying factors, the analysis provides a consistent story that reflects the real business environment of K-Electric and its preparedness to inculcate sustainability in long-term strategy.

4.4.1 Return on Assets (ROA)

ROA records the efficiency of the company in terms of the earnings it generates using its asset base. The ROA of KE increases with mediocre efficiency in 2017, and peaks in 2019, only to reverse to the negative in 2020, where it recovers, though unevenly, in 2021 and 2022, with a new low in 2023. The powerful phase (2018-2019) indicates the successful operational programs and the reduction of losses, whereas 2020 shrinkage represents the demand shock and stress of receivables due to the pandemic. The partial recovery that follows indicates that the company has stabilized, and the low ROA in 2023 indicates that the firm will face new pressure on costs (primarily fuel and finance costs) and the liquidity constraints that dominate short term operations.

4.4.2 Return on Equity (ROE)

ROE indicates profitability in the view of the shareholders and reflects more on swings due to the equity base. KE has a strong ROE in the period of 2018-2019, which is negative in 2020. The recovery up to 2021-2022 is characterized by better margins and manageable costs, but the underperformance of 2023 with a low ROE, once again, demonstrates that external headwinds (tariff timing, fuel cost pass through, and financing burden) can easily cancel profits in a capital intensive utility.

4.4.3 Debt-to-Equity (D/E) Ratio

The D/E ratio increases steadily over the period and reaches a high in 2022 with a slight increase in 2023. This path is common in utilities that are endeavoring to modernize grids and add generation to the grid as well as being burdened with old receivables and payables. The cost of money and cash flow discipline is the key to maintaining green financing programs because a high leverage adds financial risk, and headroom to new investment is limited.

4.4.4 Current Ratio

Liquidity deteriorates between 2017 and 2023 when current assets are just sufficient to finance a current short term liability more than half. The trend indicates outstanding debts, high prices of fuel, and tariff delays. In the case of a utility whose focus is on the growth in the renewable sphere, the liquidity image highlights the necessity of enhanced billing collections, negotiated settlements with governmental organizations, and more stringent working capital control.

4.4.5 Profit Margin

Peak in profit margins is in 2019, it collapses in 2020 and then only partially recovers before falling drastically in 2023. Such swings are in line with competitive and regulatory time-lags in costs. Practically, this needs prolonged recovery of margins, and to achieve this, three elements are needed, namely; (i) reduced exposure to fuel, which can be achieved by acquiring renewable fuels, (ii) rigorous management of O&M costs, and (iii) predictable tariff mechanisms, which indicate real costs in a timely manner.

4.5 Sustainability Indicators Interpretation (FY21–FY23)

Sustainability lens demonstrates a strategic change up to 2021. The expenditures on CSR and sustainability are increased, the capacity of net metering increases by leaps and bounds and the environmental performance indicators enter the routine discussion of managers. These movements

suggest that KE is leaving behind the concept of ESG as a side reporting measure, and is instead considering it as an engine of long term operational resilience and trust with its stakeholders.

4.5.1 Renewable Energy Traction

After 2021, KE is more consistent in its sustainability reporting, where the quantitative disclosures are more evident. Net metering approvals, more distributed solar sites, and cumulative PV injection are the signs of slow strides towards the inclusion of clean energy. Renewable traction increases resilience in the long term since it minimizes the exposure to imported fuel prices and helps in decarburization commitments.

4.5.2 Sustainability Expenditure Intensity (SEI)

SEI enhances because KE standardizes CSR expenditure and allocates more resources to activities related to environmental and community developments. The trend represents the shift in ad hoc community support to a structured sustainability framework, which reinforces the KEs ESG profile and qualifies the company to be green financing instruments.

4.5.3 Resource Intensity Metrics

The intensity of water is better in 2021 and 2022 but then climbs up in 2023 because of commissioning work done in new plants and thus, water is needed temporarily more in the test process. The indicators of waste management and safety training indicate the need to increase institutional power to handle environmental and social governance.

Generally, sustainability results of KE are maturing, but the resource intensity indicators are showing transitional volatility due to changes in infrastructure and operational changes.

4.6 Integrated Financial–Sustainability Interpretation

The overall analysis of the findings would indicate that the financial and sustainability indicators develop along separate paths that become more and more interconnected. The financial strength of KE prior to the year 2020 was largely due to operational efficiency and cost control. After 2021, however, the shift of the company to sustainability those of renewable involvement, expansion of CSR, and organized ESG reporting is accompanied by the increased financial pressure as a result of the external macroeconomic circumstances.

There is thus a need to point out the fact that sustainability did not lead to financial weakness but rather it was done at a time when macro financial pressure was on the frontline. The sustainability integration should help to minimize volatility in costs in the long term, alongside the stakeholder confidence, and create pathways to concessional finance, all of which are already being reflected in the eligibility of KE to green financing schemes.

4.7 Before–After Comparison of Sustainability Integration

Before Sustainability Institutionalization (2017–2019): Profitability levels were good (ROA up to 5.50%, ROE up to 15.36%), liquidity was close to stability, and the leverage was average. This is the time of efficient conventional business when economic conditions are relatively stable.

After Sustainability Institutionalization (2021–2023): Though ESG implementation has been on a faster pace with renewable momentum, financial ratios are compressing. ROA decreases, ROE reduces dramatically in 2023, profit margins diminish, liquidity becomes very low, and leverage is high. This trend is an indicator of concomitant sustainability investment and external shocks-fuel inflation, currency devaluation and cost pass through delays.

The analysis revealed that sustainability is more beneficial to the long term resilience than the short term profitability. The sustainability investments that are made at the early stage seldom have a direct financial payoff; they create institutional capacity, lessen the exposure to risks in the future, and increase the availability of green finance.

4.8 Managerial Implications

The integrated interpretation has a number of managerial implications:

1. KE needs to reinforce the working capital management in order to stabilize the liquidity and avoid solvency related constraints of operational capacity.
2. Optimization of leverage is a must; sustainability-concessional finance can cut the expenditure of borrowing.
3. ESG reporting should not be diverted to indicate stakeholder confidence and adherence to international regulations.
4. The scaled up renewable needs to be further increased to avoid the long term exposure to the fossil fuel pricing.
5. Timely recovery of cost and management of receivables should be enforced by the governance mechanisms.

4.9 Summary of Chapter

This chapter has evaluated the financial and sustainability performance of K-Electric over a period of seven years and found the evident structural patterns. The years leading to 2020 demonstrated good profitability and stability of the operations. The pandemic caused severe shocks, to which a stage of partial recovery and a new tightening of the financial belt in 2023 followed. Integration of sustainability became more material since 2021 with the help of organized ESG expenditure, participation in renewables and expansion of transparency. Even though the financial ratios were under pressure, sustainability evolution provides significant foundations towards long term stability, lower fuel susceptibility, and improved access to green financing. The findings will form the basis of Chapters 5 and 6 where the benefits of the project, recommendations and conclusions will be prepared.

Chapter 5

Project Benefits

5.1 Introduction

This chapter defines the general value created by the research project; the title of the research is Sustainable Growth through Green Financing: Evaluating K-Electric Path towards Renewable Energy. The advantages take place in four areas, academic, organizational, financial and industry wide. Since the research incorporates seven years of financial ratios with multiyear sustainability measures, the research not only adds to academic knowledge but also provides operational, strategic and policy pertinent information. The chapter details the ways, in which the findings would facilitate knowledge addition, ensure stronger decision making in K-Electric (KE), assist in transition agenda in the energy sector, and create environmental and social value.

5.2 Organizational Benefits for K-Electric

In the case of the K-Electric, the results of this research have a great level of operational and strategic importance. The analysis enables the organization to detect the financial strains that are associated with sustainability commitments and those that are associated with external shocks or industry wide limitations by showing the actual years when profitability, liquidity, and leverage have turning points. The combined explanation also reveals the fact that the adoption of sustainability is not the reason behind poor financial ratios, instead, ESG programmes developed in a time when there were macroeconomic fluctuations and tariff timing problems. This difference is essential to the internal decision makers at KE since it reinforces the argument to proceed with further renewable growth and supporting the ESG investments even in the times of financial limitations.

In addition, the sustainability monitoring which comes in detail like the traction of renewable energy, water intensity dynamics, SEI dynamics and the facilitation of the net metering gives KE the evidence based rationale to approach concessional and sustainability linked financing. The lenders are increasingly demanding quantifiable ESG indicators, and this study gathers such indicators in a format that is in a position to support funding requests and internal strategic planning as well as stakeholder reporting. Another operational need also noted by the study is the need to enhance working capital management and capital structure optimization which give KE concrete managerial priorities that should transform sustainability gains into long term financial sustainability.

5.3 Financial Benefits

On the financial level, the study shows that the integration of sustainability, when combined in a strategic manner with operational enhancements, can be able to improve the creation of long run value. By decreasing the impact on fuel-price volatility, which is among the most enduring financial risks at KE, the increase in renewables can be seen in the margin compression that occurred in the years after 2021. In the long-term, a higher renewable penetration will stabilize earnings, lower operating expenses as well as enhance predictability of cash flows. It is also found that ESG reporting periodically enhances visibility and credibility which increases the eligibility of KE to be eligible in blended finance, green bonds, and sustainability linked loans. With the industry of utilities going international, this type of financing will be an edge and it will lower the cost of capital and increase the capacity to implement projects.

The paper also highlights the role of loss reduction programmes, grid modernization, and community engagements programmes in indirectly helping to enhance financial stability by reducing losses as a result of theft, enhancing billing wellbeing and raising consumer confidence. By bringing out these interrelated advantages, the project will make sustainability not be a cost centre but a strategic financial resource.

5.4 Policy and Regulatory Benefits

This project offers meaningful contributions to policymakers and regulatory bodies working in the energy and financial industry of Pakistan such as NEPRA, State Bank of Pakistan (SBP) and the ministry of energy. The study provides evidence applicable in the design of specific policy incentives to renewable energy investment by empirically showing how green financing and financial performance and sustainability initiatives of a private utility are interacting. The results put emphasis on the necessity to make timely tariff changes, liquidity provision systems, and certainty in regulations to allow utilities to undertake long-term green projects that would not impact their financial stability.

Also, the research contributes to the optimization of green finance systems by demonstrating that sustainability-based financing can be made consistent with quantifiable performance indicators. These can be used by regulators to promote uniform ESG reporting, environmentally friendly and concessional funding, and enhanced co-operation between the public and the private sector in the development of renewable energy. In this sense, the project would help in the more informed and data-driven policymaking to help Pakistan transition to a more sustainable and resilient energy system.

5.5 Academic Benefits

Academically, the paper adds a systematic, empirical base to the comprehension of the intersection between financial performance and sustainability adoption of a large vertically integrated utility in a developing economy. The combination of the longitudinal ratio analysis and year specific sustainability indicators show that green financing could be measured through the application of a dual lens framework that considers both the operational realities and environmental commitments. The methodological model bridges the gap in the local literature, which has generally separated financial performance and ESG progress instead of combining them into a unified evaluation. Also, the project can be used practically by students in the future who may study renewable energy economics, corporate sustainability or the financial management of the utility sector. The systematized analysis of the KE financial performance, shock, recovery, and integration of sustainability phases, provide a guide of examining the other energy related companies as to how they went through the same change.

5.6 Social and Environmental Benefits

On top of organizational and financial impacts, the project has huge social and environmental value as it helps to enforce the principle of sustainable energy use in the Pakistani power industry. The paper highlights the importance of greater reliance on renewable energy and green financing as a way of lessening reliance on imported fossil fuels, lessening carbon emission, and diminishing environmental degradation. These are the direct outcomes or results of better air quality, less risk of climate-related impacts, and overall stronger environmental resilience of communities that K-Electric serves.

Also, the project points out the greater social benefit of sustainability projects, such as community development projects, better energy availability, and greater public understanding of clean energy solutions. By incorporating corporate financial plans with environmental and social objectives, the study endorses the national and global sustainability aims especially Sustainable Development Goals (SDG) 7(Affordable and Clean Energy) and SDG 13(Climate Action). In that regard, the study notes that green financing is not merely a financial instrument, but also a vehicle of inclusive and environmentally-friendly growth.

Chapter 6

Limitations and Conclusion

6.1 Limitations of the Study

Despite the fact that such studies present valuable information about the connection between green financing, sustainability programs, and the financial performance of K-Electric, it should be noted that there are a number of limitations that should be taken into consideration to put the findings into perspective. To begin with, the analysis will solely be based on the secondary data, which will be collected through the published Annual Reports of K-Electric and Sustainability Reports. Although these documents are credible and audited they might not reveal all details of how the operation works as well as internal sustainability spending as well as project level financials which could further narrow down the analysis. The research is therefore limited in the level, frequency as well as transparency of the public disclosures made by the company.

Second, the years under analysis do not provide consistent sustainability reporting. Interestingly, no independent Sustainability Report appeared in FY-2020, and previous years (2016-2019) focus on narrative successes as opposed to the use of standardized Key Performance Indicators (KPIs). Consequently, not all the sustainability indicators, including emissions intensity, waste production per unit activity, and the share of renewable energy, could be compared year-on-year with numerical accuracy. This had an impact on longitudinal trend analysis reliability.

Third, the firm is in a highly controlled utility market where the financial indicators are very much affected by external factors such as fuel-price volatility, timing of tariff determination, circular debt build, and macroeconomic pressures such as inflation and exchange rate fluctuations. Such structural limitations indicate that changes in profitability, liquidity, and leverage could not be seen as the result of sustainability decision-making or green financing. The multifaceted regulatory environment lowers the possibilities of isolating the direct financial effect of the ESG initiatives.

Another weakness is caused by the lack of primary data in the form of managerial interviews, investor views, or regulatory wisdom that would have enhanced the interpretive richness. These attitudes might have confirmed or refuted interpretations- especially as to whether sustainability investments were inspired internally by strategic purpose or externally by compliance, lender demands or reputational influences.

Finally, the research is restricted to a single organization which limits the generalization. Despite the fact that KE is a big, vertically integrated utility with a rich case study, it has a unique structure and is exposed to regulation which implies its transition trajectory might not be reflective of other energy companies. A wider sector or comparative analysis would give a bigger picture on the sensitivity of sustainability to financial performance in the universal power industry in Pakistan.

Regardless of these shortcomings, the paper is analytically sound, and it clearly shows the relationship between sustainability integration and long term financial resilience, and it is necessary to establish a better ESG data consistency in the Pakistani energy industry.

6.2 Conclusion

This research paper has aimed to assess the extent to which the shift of K-Electric towards sustainability, especially the incorporation of renewable energy and the use of green financing, can help the company to be more financially stable and operationally resilient in the long term. Through the analysis of seven years of financial ratios and sustainability indicators, the study concludes that KE sustainability is a strategy and evolutionary process that has been influenced by infrastructural upgrades, community centric interventions, loss reduction programs and early adoption of renewables.

The results reveal the definite trend in performance in 2017-19 KE was characterized by high profitability and increasing margin, which was facilitated by efficiency increases and moderate leverage. In 2020, there was an evident outside shock, which brought about adverse profitability and reduced liquidity.

Since 2021, KE institutionalized its sustainability system, including the expansion of net metering, increasing the strength of CSR budgets, modernizing ESG reporting, and preparing renewable energy transitions. All these developments have placed KE in the position of long term resilience but the financial ratios are strained in the short term because of fuel expenses, circular debt, and high leverage.

Significantly, the research proves that the integration of sustainability is not directly reflected in the enhanced financial ratios, particularly in the regulated markets. Rather, ESG investments are long term stabilizers and minimizing fuel dependency, promoting concessional financing, enhancing grid reliability, and enhancing community relations. This means that sustainability cannot be taken as a cost, rather it can be viewed as strategic base in future competitiveness.

This study brings research contribution to the academic community by offering a systematic framework of analyzing the financial plausibility of sustainability in the utilities of the emerging markets. In practical terms, it emphasizes the significance of ensuring a match between green financing tools and operational reforms and more aggressive processes of converting cash to unlock the potential of sustainable investments.

6.3 Recommendations

1. Managerial Recommendations (For K-Electric)

To maintain the sustainability in the long run, K-Electric needs to enhance the aspect of integrating green financing with its overall financial strategy. Management of working capital and minimizing the use of short-term debt could increase liquidity and help to finance the continued renewable energy initiatives. Furthermore, the company also needs to institutionalize further the ESG practices by attaching sustainability targets with financial performance indicators to enhance transparency and investor confidence.

2. Financial and Investment Recommendations

K-Electric needs to consider diversified instruments of green financing such as green bonds, sustainability-linked loans, and concessional financing through development institutions to reduce the cost of capital. Banks and funds are urged to consider ESG performance indicators when making their financing choices because investments that are based on sustainability have been shown to have long-term risk-reduction properties. The access to the international green finance markets can also be enhanced by enhancing the disclosure standards.

3. Policy and Regulatory Recommendations

Regulatory agencies are supposed to offer increased certainty in the policy by ensuring timely adjustment of the tariffs and favorable regulations to enable sustainable investments by the small utility companies. Green financing can also be encouraged with incentives on financing renewable energy, the standardization of the requirements of ESG reporting, and the cooperation between the regulator and financial institutions. These would allow the utilities to achieve sustainability without reducing their financial stability.

4. Sector-Level Recommendations

Renewable energy integration and sustainable financing models should be given priority in the energy sector in Pakistan in order to minimize the reliance on imported fuels and enhance the energy security. K-Electric lessons may be considered as a reference point of other utilities that want to reconcile between financial performance and environmental responsibility.

5. Academic and Research Recommendations

Primary data collection in the form of interviews with the management, regulators and financiers should be included in future research in order to have deeper insight of green financing decision. Subsequent research involving comparative analysis of various companies or industries and application of econometric methods could further reinforce the knowledge on the financial implications of sustainability programs in the emerging markets.

6.4 Final Thoughts: Green Financing as a Pathway to Sustainable Growth

This paper has discussed the importance of green financing in enabling the financial performance and long-term development of K-Electric in the framework of the developing energy sector in Pakistan. The combination of financial ratio analysis and sustainability indicators in the research will give a comprehensive insight into how both the environmental and financial goals can be achieved within a controlled utility situation. The results indicate that the short-term financial issues remain because of the macroeconomic and regulatory limitations but sustainability-driven financing has a beneficial impact on the long-term resilience and strategy stability.

Generally, the paper supports the need to ensure that financial decision-making does not contradict environmental and social responsibility to ensure sustainable development objectives are met. The lessons learned during the research have a practical interest to corporate managers, investors and policymakers aiming at encouraging the use of sustainable energy solutions in emerging economies. This project can be attributed to the overall development of knowledge on sustainable finance and highlights that the use of green financing is highly applicable in transforming the energy sector in Pakistan in the future by raising awareness of its long-term advantages.

References

- K-Electric. (2023). *Sustainability report 2022–23*. Karachi, Pakistan.
- NEPRA. (2022). *State of the industry report 2022*. National Electric Power Regulatory Authority.
- Climate Bonds Initiative. (2024). *Green bonds global market summary 2023*.
- OECD. (2020). *Developing sustainable finance markets*. Paris: OECD Publishing.
- Pakistan Economic Survey. (2023). *Energy and power sector overview*. Ministry of Finance.
- UNEP FI. (2016). *Green finance: Catalyzing investment in sustainable development*. United Nations Environment Programme.
- World Commission on Environment and Development. (1987). *Our common future*. Oxford University Press.
- Zhang, D., & Wang, J. (2021). Green finance and firm performance: Evidence from emerging markets. *Journal of Cleaner Production, 278*, 123–147.
- NEPRA. (2022). *State of the industry report 2022*. National Electric Power Regulatory Authority, Pakistan.
- OECD. (2020). *Developing sustainable finance markets*. Paris: OECD Publishing.
- Sachs, J. D., Woo, W. T., Yoshino, N., & Taghizadeh-Hesary, F. (2019). *Financing sustainable development: Ideas for action*. Springer.
- UNEP Finance Initiative. (2016). *Green finance: Catalyzing investment in sustainable development.* United Nations Environment Programme.
- Zhang, D., & Wang, J. (2021). Green finance and firm performance: Evidence from emerging markets. *Journal of Cleaner Production, 278*, 123147. https://doi.org/10.1016/j.jclepro.2020.12314

- State Bank of Pakistan. (2022). *Green banking guidelines progress review report*. Karachi: SBP.
- Zhang, D., & Wang, J. (2021). Green finance and firm performance: Evidence from emerging markets. *Journal of Cleaner Production, 278*, 123–147.
- UNEP Finance Initiative. (2016). *Green finance: Catalyzing investment in sustainable development.* United Nations Environment Programme.
  → Supports global context for sustainable financing and its relevance for corporate transitions.
- K-Electric. (2023). *Sustainability and annual report 2022–23.* Karachi: K-Electric Limited.
  → Primary data source for your firm-level analysis (financial and sustainability indicators).
- Asian Development Bank. (2021). *Pakistan: Energy sector assessment, strategy, and roadmap.* Manila: ADB Publications.
  → Relevant for explaining regional renewable financing trends and institutional support mechanisms.
- Pakistan Economic Survey. (2023). *Energy and power sector overview 2022–23.* Ministry of Finance, Government of Pakistan.
- Sachs, J. D., Woo, W. T., Yoshino, N., & Taghizadeh-Hesary, F. (2019). *Financing sustainable development: Ideas for action.* Singapore: Springer.
- State Bank of Pakistan. (2017). *Green banking guidelines.* Karachi: SBP.

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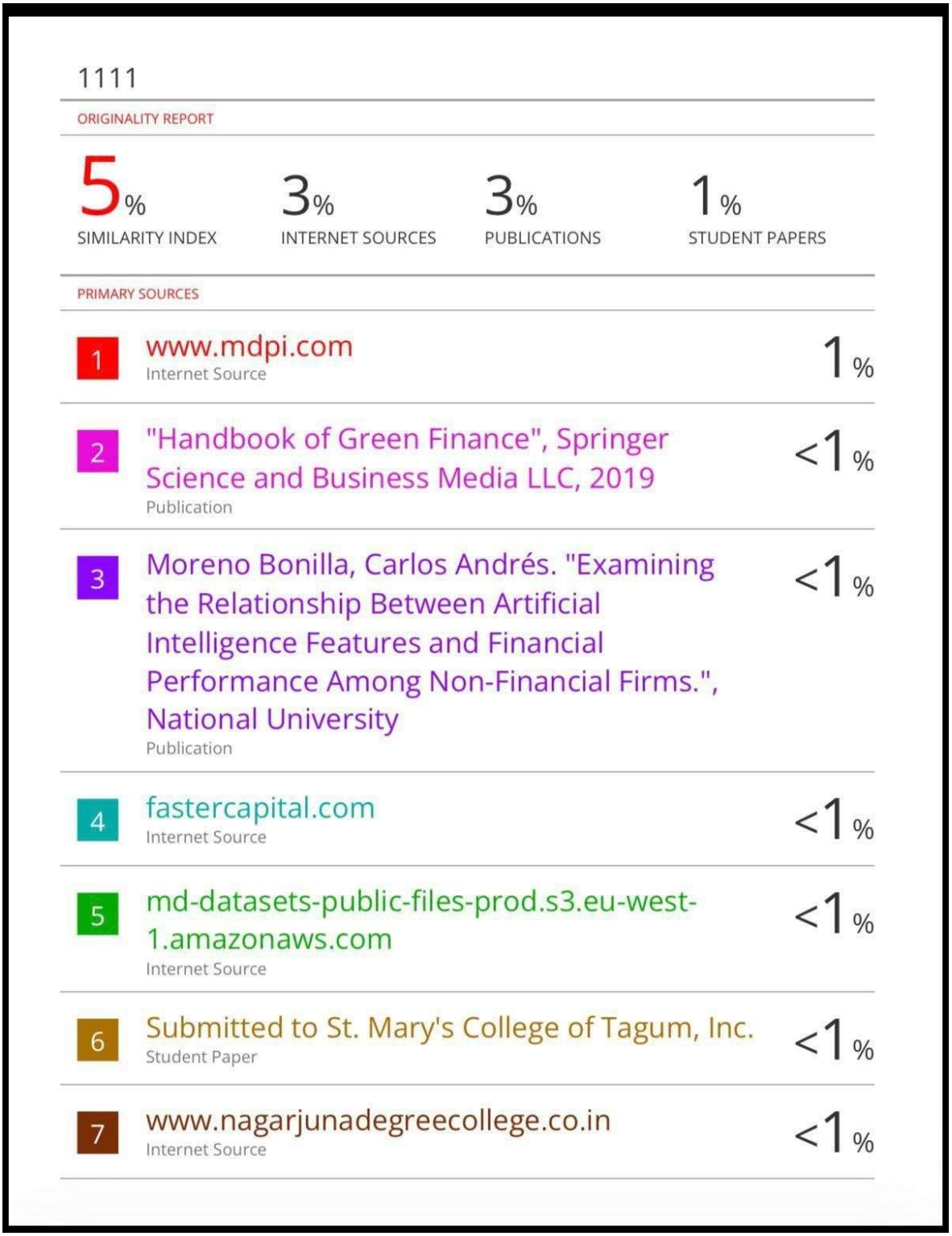

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RC-04

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Enrollment No.	01-111221-035 , 01-111221-034
Thesis/Project Title	Sustainable Growth through Green Financing: Evaluating K-Electric's Path to Renewable Energy

Supervisor Student Meeting Record

No.	Date	Place of Meeting	Topic Discussed	Signature of Student
4	25/11/25	Office	Methodology	Haniya Haneen
5	3/12/25	Office	Ratio Analysis	Haniya Haneen
6	12/12/25	Office	Conclusion	Haniya Haneen

APPROVAL FOR EXAMINATION

Candidates' Name: Haniya Qureshi, Haneen Musa Enrollment No: 01-111221-035, 01-111221-034

Project/Thesis Title:
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RC-04

MBA

1st Half Semester Progress Report

Name of Student(s)	Haniya Qureshi, Haneen Musa
Enrollment No.	01-111221-035, 01-111221-034
Thesis/Project Title	Sustainable Growth through Green Financing: Evaluating K-Electric's Path to Renewable Energy

Supervisor Student Meeting Record

No.	Date	Place of Meeting	Topic Discussed	Signature of Student
1	2/10/25	Office	Overview of project and how to approach it	Haniya Haneen Musa
2	16/10/25	Office	Introduction of project	Haniya. Haneen Musa
3	22/10/25	Office	Literature Review	Haniya Haneen Musa

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Signature of Supervisor: _____ Dr. Sadaf Alam Date: 05/11/2025

Name: _____ Note:

Students attach 1st & 2nd half progress report at the end of spiral copy.