*Encouraging Green Energy Development: Investment Opportunities In Rural Electrification Corporation Of India*

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**Abstract** :

Rural Electrification Corporation is the 12th Maharatna Company in India, This is the nature of a holding Company controlled by the Ministry of Power. Nowadays this corporation is popularly known for green energy and renewable energy evaluation. Title: Encouraging Green Energy Development: Investment Opportunities in the Rural Electrification Corporation of India. This research article explores the investment potential within the Rural Electrification Corporation1 of India (REC)18 in the growing green energy landscape.

Through a comprehensive analysis of REC's position in the renewable energy sector, this study identifies key investment Revenues. It assesses REC's financial performance, risk profile, and strategic initiatives aimed at capitalizing on renewable energy growth including PM Modi's Panchamrit[4],[5] Strategy.

The research highlights various investment instruments available within REC, including equity, bonds, and structured finance products tailored for green energy projects. Additionally, it explores opportunities for international investors seeking exposure to India's rapidly expanding renewable energy market through REC's initiatives.

By leveraging its expertise, network, and financial resources, REC stands poised to unlock substantial investment potential in green energy infrastructure development. This article enacts as a worthy resource for investors, financial institutions, and also policymakers seeking to capitalize on the lucrative opportunities presented by REC's commitment to fostering sustainable energy solutions in India.

Key Words: Panchamrit , Investment, Sustainable development, Renewable Energy, Financial Performance

**Introduction:**

Rural Electrification Corporation1  is the 12th "Maharatna'' company controlled by the Ministry of Power1, it’s a form of Holding company registered with the Reserve Bank of India, established in the year 1969 for the purpose of improvement of our country's farmers’ life. REC’s main objective was to invigorate agricultural pump-set for proper water supply, so that the farmers don’t have to rely on monsoon. Later on REC has played a vital role to flourish the power sector using renewable energy and mandate financing in new technologies such as green hydrogen, electric vehicles, battery storage etc and also diversified into non power sectors like roads, metro rail, airport , IT communication , refinery , steel etc . Nowadays REC provides term loans and different kinds of financing products to central, state and private companies for creating and improving infrastructural assets in our country.1

**Research Methodology**

**Sample Size :** Sample Size Of this study small in size , all related datas are limited to last 5-7 years information available on the internet.

**Method of Sampling** : These samples were selected through random Sampling method .

**Data Collection**: This article is completely based on secondary data .

**Period of Study:** Period of the study limited to the last 5 - 7 years Annual Reports' of REC and press release.

**Statistical Tool** : Percentage analysis , Ratio Analysis, Pie Chart , Bar Chart etc .

**Literature Review**

1. M Bamberger ,P Uawithya ,S Shekhar ,B Gupta. (April September 2013) ."***Evaluating the Economic and Equity Impacts of a Decentralised Rural Electrification Program in India***" .South Asian Journal of Evaluation in Practice :10

 This study provides a concrete overview of the challenges and Motos of the "Rockefeller Foundation-supported program"21, "Smart Power for Environmentally-sound Economic Development (SPEED)"22, focusing on decentralised rural electrification in India. The paper figure outs the framework for appraising the economical and equity based impacts of the program, underlining the significance of access to hand friendly energy for poverty reduction and economic development in rural areas. It discusses the methods and indicators used in the evaluation, including a "mixed-methods approach " combining statistical analysis with qualitative techniques such as focus groups and case studies. Moreover, it highlights the significance of assessing equity aspects and the sustainability of the SPEED business model. The evaluation framework aims to measure equitable growth, equitable access to energy, and the impact of SPEED's inclusive business models. Basically this article serves standardized insights into the entanglement of rural electrification and the significance of contemplating equity in energy access initiatives.

1. J Cust, A Singh and K Neuhoff .(December 2007)."***Rural Electrification in India: Economic and Institutional aspects of Renewables ". papers.ssrn.com*** 11

 The research article analyses the rural electrification in India, focusing on economical and institutional aspects of renewables. It discusses the necessity for rural electricity services, emphasising the importance of reliable and hand friendly electricity for economic development and flourishing living standards in rural areas. The paper explores the potential contribution of decentralised distributed generation (DDG) technologies, particularly renewable energy, to rural electrification through case studies and stakeholder interviews across northern India.

Despite the economical advantages of renewable energy resources and technologies, the article focuses on various barriers to their deployment, including financial challenges, lack of technological capacities, and institutional barriers . It proposes a framework to assess the economic viability of rural electrification projections and identifies organisational structures conducive to replication and large-scale deployment.

Finally , the study underscores the importance of addressing both economical and institution based prospects to achieve victory on rural electrification in the India, aiming for widespread willingness to pay among rural households and energy users. Through replication of successful approaches, there is significant potential for large-scale deployment of renewables for rural energy across India and beyond.

1. N J. Williams i, P Jaramillo , J Taneja T S Ustun .(2015)**.**" ***Enabling private sector investment in microgrid-based rural electrification in developing countries: A review*** ". [***https://www.sciencedirect.com***](https://www.sciencedirect.com) 12

 The research article explores the challenges and potential solutions for permitting private sector investment in "micro grid-based" rural electrification in developing Countries. It mainly focues on the significance of electricity accessibility for economical and social development, specially in remote rural zone . This paper basically discusses the barriers and complexities such as insecure revenue streams, capitalization (financial) issue , and long - time investment risks , and evaluates intermediation such as 'subsidy models' , 'risk guarantees' , and different kinds of revenue streams to excel these barriers. The study represents the need for further research to evaluate the usefulness of these intermediatories in order to provide strongest policy supervisor to decision makers in developing and under developed countries.

1. SH. Kulkarni , T.R. Anil .(2015). " ***Status of Rural Electrification in India, Energy Scenario and People’s Perception of Renewable Energy Technologies*** ".<https://www.tandfonline.com> : 13

 The study examines a valuable overview of the status of rural electrification in India, emphasising the significance of clean and sustainable energy access for economic development and poverty reduction. It highlights the challenges faced in rural areas due to insufficient access to newish energy resources , specially electricity, and discusses the socio - economic implications of energy poverty. The review also discusses government initiatives and policies planned for promoting electrification in rural zone , including the 'Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)' and various segregated energy production technologies . Aditionally , it represents findings from rural energy surveys, indicating a growing interest among rural communities in adopting renewable energy technologies. Overall, the study underscores the urgent need for expanding access to reliable and affordable energy services in rural India to improve living standards, enhance economic opportunities, and address environmental concerns.

1. A Chauhan, R.P. Saini. (2015). *"****Renewable energy based off-grid rural electrification in Uttarakhand state of India: Technology options, modelling method, barriers and recommendations" .*** [***https://www.sciencedirect.com***](https://www.sciencedirect.com) ***14***

The research article explores the renewable 'energy - based off-grid rural electrification' in Uttarakhand, India, highlighting the viability of utilising local resources like solar, hydro, biomass, and wind to address energy deficiencies in remote areas. It discusses the potential of renewable energy sources and proposes technology options for energy conversion. A methodological framework for rural electrification in off-grid mode is outlined, considering the geographical and resource-specific characteristics of Uttarakhand. The article also identifies barriers and issues hindering the implementation of renewable energy solutions, such as technological constraints, economic viability, and regulatory challenges. Recommendations are provided to overcome these barriers, including strategies for resource assessment, institutional framework development, and skill enhancement. Overall, the study underscores the importance of renewable energy in improving energy access, agricultural conditions, and socio-economic development in rural Uttarakhand.

**Objectives of the study:**

• To analyse the renewable energy setup by REC.

• To evaluate sustainable green energy growth.

• To understand initiatives taken by the government in the renewable energy sector.

• To analyse investment opportunities in REC.

• To explore its future growth and project initiative through analysing past records.

**Analysis Of Data**

REC’s SUSTAINABILITY STRATEGY

| ***YEAR***  | ***(Rs)***  | ***RENEWABLE ENERGY PROJECTS (NUMBER)*** | ***TOTAL GENERATION CAPACITY***  |
| --- | --- | --- | --- |
| 2021-22  | 14734 Cr. | 15  | 1.6 GW  |
| 2022-23  | 25433 Cr.  | 20  | 5.9 GW  |

According to available last 2 years records shows that REC is growing successfully in the field of green energy as well as renewable energy evaluation.

MOU CONTRACTS (GROUP ALLIANCES/ FUTURE PLAN)

| **NAME OF CONTRACTS**  | **PROJECTS / PURPOSE**  | **AREA**  | **FINANCE (Rs)** |
| --- | --- | --- | --- |
| OPGC Partnership  | Thermal Power Projects  | Jharsuguda, Odisha  | 9538 Cr  |
| Acme group collaboration  | Green Energy and Ammonia facility  | Gopalpur, Odisha  | 16000 Cr  |
| Avaada Group Alliance  | Renewable energy projects (Green Energy and Ammonia facility)  | Bihar, Rajasthan, Maharashtra  | 20000 Cr  |

Based on the press released data and some future initiative this study may generalise REC ltd is working towards green energy development.

FUTURE PLAN (others)

| **PARTICULARS**  | **CONTRIBUTION OF LOAN****(By the year 2030)**  |
| --- | --- |
| Metro, Ports, Airports, Oil refining, healthcare, Highways etc.  | Rs. 85700 Cr. |
| Green Projects loan  | Rs. 300000 Cr.  |

Future plans of REC’s are very impressive for our country’s growth, according to above data this study implicate their have a great opportunity for significant benefit.

**SEGMENT WISE ANALYSIS:**

| **ITEM** | **FINANCIAL CONTRIBUTION** |
| --- | --- |
| Income from loan assets | 98.18% |
| Fees for implementation of govt scheme | 0.31% |
| Income from treasure operation | 0.78% |
| Revenue from sale of service | 0.73% |

 Source: By trade brains’ report, Feb. 1, 2024, case study)

Interpretation: According to the above table, shows that REC contributes a large amount in loan financing, and also successfully takes part in different areas of operation.

FIVE YEAR PERFORMANCE ANALYSIS (IN AMOUNT)2
TABLE 1:

| **YEAR**  | **TOTAL INCOME AFTER TAX (Rs. Cr)**  | **NET WORTH****(Rs. Cr)**  | **LOAN BOOK****(Rs. Cr)**  | **BOOK VALUE PER SHARE** **Rs. 17** | **EARNING PER SHARE (EPS)****Rs.**  | **DIVIDEND PAY OUT RATIO (PER SHARE****Rs.)** |
| --- | --- | --- | --- | --- | --- | --- |
| 2019  | 25341  | 34303  | 281210  | 130.27  | 21.92  | 8.25  |
| 2020  | 29829  | 35077  | 322425  | 133.21  | 18.56  | 8.25  |
| 2021  | 35410  | 43426  | 377418  | 164.92  | 31.75  | 9.53  |
| 2022  | 39230  | 50986  | 385371  | 193.63  | 38.02  | 11.48  |
| 2023  | 39253  | 57680  | 435012  | 219.05  | 41.85  | 12.60  |

 (REC-Annual–Report-FY-2022-23)

TABLE 2:

| **YEAR**  | **OPEARATING PROFIT RATIO (%) 16** | **NET PROFIT RATIO (%)**  | **RETURN ON NET WORTH (%)**  | **RETURN ON INVESTMENT (EQUITY) (%)**  | **DEBT – EQUITY RATIO (times)**  | **INTEREST COVERAGE RATIO (times) 9** |
| --- | --- | --- | --- | --- | --- | --- |
| 2019 | 93.35 | 22.57 | 9.21 | 17.01 | 7.07 | 1.52 |
| 2020 | 86.65 | 16.57 | 8.67 | 14.19 | 8.09 | 1.37 |
| 2021 | 90.74 | 23.57 | 9.28 | 21.32 | 7.53 | 1.5 |
| 2022 | 87.71 | 25.56 | 9.1 | 21.36 | 6.49 | 1.56 |
| 2023 | 95.3 | 28.29 | 9.14 | 20.62 | 6.55 | 1.59 |
| AVERAGE | 90.75 | 23.312 | 9.08 | 18.9 | 7.146 | 1.508 |

 (By Trade Brains, Feb 01, 2024)

**INTERPRETATION AND CONCLUSION**

Based On the Five-year performance of REC, this study analyses that REC uses Loan financing more than equity capital, its debt-equity ratio represents that REC has 7 times more debt than equity in its capital structure, furthermore, its average return on equity is 18.9%, here is it may be concluded that the REC performance is relatively stable to improve succinctly, and its interest coverage ratio is good in terms of its interest expense (Avg 1.508 times).

 Analyses the press releases and the stock price index indicates that the performance of that corporation is fairly remarkable and beneficial for investment. On 28th March REC Ltd closed their share price at @451. 00 and it will be targeted in near 2025, projected to be Rs 684.71, So here it may be concluded that there is a high recommendation to strongly buy for long-term investment.

 REC Ltd issues, bonds with a coupon rate of 5.25% and a maturity period of 5 years, here investors can also avail tax exemption limit mentioned in section 54 EC10, cause section 54EC allows investors to claim exemption from capital gains tax on the sale of specified assets by investing the capital gains in designated bonds issued by specific entities, such as REC ltd.

 According to the above data findings, this study analyses 5 years performance of a rural electrification corporation, this company is funded and controlled by the Ministry of Power setting electricity in Rural Areas.  This Corporation also works with renewable energy resources and promotes green energy evolution.  In the year 2017 **Saubhagya Scheme1** was launched with the amount of 16,320 Cr. approximately to connect electricity in every household to access different kinds of communication like TV, Radio, Internet, and Mobile etc.

RECs also planned to work with **Panchamrit[4],[5] ,** which was committed by PM Modi at COP 265 held in the year 2021.

So finally, this research articulates that as a responsible citizen of our Country, we may make India deep green and pollution-free if we take part in motivating the use of renewable energy resources and invest our savings to grow them momentarily.

Through rigorous statistical analysis and comprehensive research, this article provides valuable insights for investors seeking to capitalize on the equity potential of REC , in the realm of green energy development for rural electrification. By understanding REC's financial performance, impact metrics, regulatory environment, market dynamics, and future outlook, investors can make acquainted decisions that align with their financial objectives and sustainable goals.

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