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An Investigation into the Models for Financing Renewable Energy Production in Low-Income Settlements in Gauteng, South Africa: A Review

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Abstract:- South Africa faces a lack of reliable, modern electricity, essential for economic and social development. Many communities in Gauteng, particularly rural, informal settlements, are not connected to the national grid, leaving 39 percent of the province's residents in darkness and relying on paraffin and gas to survive the cold winters. In addition, these two components increase the number of dead fires in unofficial regulation and the price of electricity camps, increasing the load on the poor.

In this study, we surveyed existing literature on the affordable funding model of renewable energy sources, collected primary data in structured industry interviews and stakeholders. This research focused on this survey, focusing on domestic recurring models and analysing the appropriate financing model and financial exhibition source project funding, green finance, public, private partnership, Government subsidies and private investors also instruct foreign investors. Financial procurement model is mixed. In this study, we have developed a framework that allows representatives to link to the outlook of financiers and decision -making, using a mixed methodology approach, and allows you to allow reliable and useful research results. This gap represents a significant obstacle to renewable energy financing.

Furthermore, the results indicate that innovative financing channels are needed to promote renewable energy development in Gauteng and South Africa, as traditional financing methods have had little effect in stimulating renewable energy development. Furthermore, the results show that green energy investors consider renewable energy sources to be very risky, even when supported by government policies. Therefore, the study proposes a financing model that brings together funders into small financial consortia to fund local renewable energy projects using a blended financing model. Such a model would spread risk across multiple investors, thereby reducing the potential risks of investments while achieving the goals and benefiting from tax credits and other incentives for investing in renewable energy.

Keywords:- *Direct Foreign Investment, Financing Model, Gauteng, Public-Private Partnership, Renewable Energy, Renewable Energy Producers, Tax Rebates, South Africa*.

I. INTRODUCTION

Energy poverty remains one of the most significant obstacles to socio-economic progress in Africa. More than 600 million households lack access to essential energy services, and population growth means existing energy shortages are expected to continue for decades to come. Eskom (the national electricity supplier) is struggling to provide electricity to industrial development zones/workplaces, thus negatively impacting economic activity (Statsa, 2012).

The energy industry's contribution to South Africa's total greenhouse gas emissions is about 80%, of which 51% comes from electricity generated solely from liquid fuel production, but distributors are keen to support the state-owned enterprise in providing services and public services (IRP, 2019).

South Africa participates in the electricity market through Eskom and trades electricity through the Southern African Power Pool (SAPP). Although the African continent is rich in primary energy resources, energy trade between African countries is limited. South Africa through Eskom imports electricity from the Cahora Bassa dam in Mozambique. South Africa via Eskom also exports electricity to SADC countries, but with obstacles in free trade agreements (IRP, 2019).

Although there are limitations to investment in new renewable energy sources, there is a latent demand for financing various activities related to energy exploration, exploitation, development and distribution produced from alternative energy sources. However, for most developing countries, this issue is more of a limitation than an opportunity (Ali, 2016).

Renewable energy development can be financed using a variety of models and sources of funding. In this study, some use the traditional category (old models) or models that use two different mechanisms to classify traditional financing and current innovation/technology financing models (Shrestha, 2007).

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Finance plays a key role in the adoption of renewable energy sources, which can have a positive impact on socio-economic development while contributing to reducing greenhouse gas emissions. Most REAs incur high upfront costs associated with equipment purchases, feasibility studies, land purchase or lease agreements, and multiple service contracts for project development. If the state, state, or national policy alone is not enough for the development of renewable energy, creditors are very high -level representatives in accordance with the risks related to financing in these circumstances. It is a normal practice to set an interest rate on a bank loan (Nelson & Shramali, 2013).

II. DIRECT FOREIGN INVESTMENT

Foreign investment has an impact on South Africa's energy crisis. Foreign direct investment (FDI) is investment in a foreign company or project by an investor, company or government from another country. FDI is a category of cross-border investment where an investor resident in one country establishes a lasting interest and significant influence over a company resident in another country (IRP, 2019). As a significant number of South Africa's unreliable coal-fired power plants are phased out and the government opens up the power sector, BDO South Africa (2023) confirms that opportunities are ripe for investor international companies looking to expand into the country's renewable energy sector. This is a new positive, from both the possibility of promoting load issues and implanting the economy as needed.

South Africa has attracted most projects on the African continent from the viewpoint of renewable energy source PTI. Between 2004 and 2022, the country received 119 renewable energy projects worth $20 billion. A continued focus on improving energy resilience will not only reduce pressures caused by load shedding but also support increased investment and economic growth, as well as the transition to clean energy. The increase in PII promotes employment and skill development, and introduces technology from around the world. PII is also important to create intense competition, violate internal monopoly, and increase economic growth and financial stability. However, if we are to benefit from true sustainability, a long-term perspective is important, not just in terms of power generation but also in terms of economic development (BDO South Africa, 2023).

The renewable energy investment space makes sense for a wide range of foreign investors. Abundant sunshine, strong winds and wave energy make South Africa rich in renewable energy sources. The country is regularly seen as a permanent global destination for renewable energy investments, offering strong returns. Attracting investment is not a problem. Our country's problem has not been a lack of natural resources. Rather, growth has been hindered by the fact that stakeholders cannot make the most of them. There were no effective collaboration or united approach to create an environment for prospering renewable energy projects (IRP, 2019).

Much of the responsibility for creating these optimal conditions falls on the government, but steady progress is unfortunately hampered by bureaucracy. The National Energy Crisis Committee, set up about six months ago, has set itself the task of implementing a plan to end power outages and significantly reduce bureaucratic red tape, but any real benefit has yet to be seen. Politicians need to establish effective mobilization and investment transparency and prediction. The government needs to be clear in the laws they configure and potentially rely on their exciting structures to attract foreign investors. The problem now is that there seems to be no clear voice that cuts through the political noise (BDO South Africa, 2023).

Eskom has said its biggest priority for the next two years is to comprehensively address the systemic issues that have plagued the company for years. Investors may not want to take the risks associated with waiting to see the outcome, and would be better off focusing on changing their own rigid policy regime so that global investment in South African suppliers can continue, and maybe even shift to other avenues, such as hydrogen energy. Hydrogen offers an unparalleled solution for clean energy and the country is in an extraordinary position to revolutionise our economy by supplying green hydrogen to the world. A robust policy and transparent legislative framework are crucial to instil confidence and clear the path for long term investors. The private sector and foreign companies have the willingness, skills and capital to develop significant renewable energy resources. We have the ways and means to overcome the power crisis and it is time to remove the bureaucratic red tape that is impeding real progress (BDO South Africa, 2023).

III. FINANCING MODEL

Financial models are used to predict a company's future financial performance, and the predictions are used for a variety of purposes such as business valuation, project appraisal, acquisition decisions, bond issuance, credit ratings, etc. Financial models are used by bankers, accountants, consultants, economists, portfolio managers, quantitative analysts, financial planners, as well as anyone who benefits from predicting an organization's future financial performance (IRP, 2019).

Solar Africa (2021) has confirmed that energy utility ESKOM has been given the long -standing non -clean management, continuous electricity interruption, and the increase in energy duties in South African industries and production sector. Their commercial activities. Probably, the most preferable alternative to the system supplied from the state is gradually considered the most affordable energy solution outside the South African network (Solar Africa, 2021).

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According to the Department of Energy, South Africa's solar resources are one of the highest in the world, with an annual 24-hour solar radiation average of around 220 W/m2. Considering this alongside the 300% increase in national electricity prices over the past thirteen years, the growing trend towards solar power for businesses seems inevitable. According to renewable industry organisation GreenCape, rooftop small-scale embedded solar generation systems remain the dominant renewable energy technology in South Africa due to price, technical maturity and ease of implementation (Solar Africa, 2021).

The installed capacity of solar PV rooftop systems in South Africa has increased from 387 MWp in 2017 to approximately 1.35 GW in 2020/21, it outlines. With this significant market growth, numerous financing mechanisms have emerged in recent years to finance larger commercial and industrial solar PV installations and operations, including power purchase agreements (PPAs), fixed roof rentals, rental or leasing contracts, initial capital investment and banking options. While the adoption of solar PV systems by commercial and industrial businesses has become commonplace, the most important factor for these businesses is choosing the most suitable financing option for their solar project (Solar Africa, 2021).

❖ *Solar Finance Options*

➢ *Power Purchase Contract (App)*:

App is a popular option among commercial and industrial consumers because system installation, operation, and maintenance are completely covered by solar service providers. In most cases, this financing mechanism includes insurance and performance guarantees, and the biggest advantage is to reduce power costs from the first day. This allows business owners to enjoy the benefits of clean energy from a solar PV system installed at their premises, at no upfront cost. A PPA includes the installation of a fully operating solar system but removes the hassle of having to maintain, monitor, operate and clean the system for years to come. Business owners can now take advantage of solar energy and the savings it will provide, with zero investment costs and zero operational risks (Solar Africa, 2021).

➢ *Fixed Roof Leasing*:

Fixed roof leasing has become the preferred choice for mall and shopping center owners as a long-term roof rental contract monetizes their previously unused roof space. Solar power service providers pay property owners a fixed monthly fee for the use of rooftop space on their buildings, which also provides solar power for the property. The property owner pays the solar power service provider for the energy they use based on Nersa or municipal rates, but other costs such as system maintenance, operation, and insurance are covered by the service provider.

➢ *Rental /Rental Contract Rental*:

Equipment rental, leasing long -length solar panel installation, maintenance, and solar lease contracts, which are also called management. Monthly payment is determined based on the annual production of the solar system. A lease differs from a PPA in that the customer pays a fixed amount each month, rather than agreeing to purchase the electricity produced by the system at a fixed price per kilowatt-hour (kWh).

➢ *Upfront Investment Costs*:

Companies that can finance a solar project from existing cash reserves may find the benefits attractive, even though the initial costs are staggering. A medium-sized commercial system of 200 kWp currently costs between R1.9-million and R2.1-million, excluding battery costs. Benefits to cash-funded systems include VAT deductions, as well as Section 12b tax benefits and carbon credits, which can result in additional cost savings of up to 28%. However, the company is also solely responsible for all ongoing annual costs, such as installation, insurance, monitoring and performance management, which can amount to a minimum of R88 500 per year, as well as exposure to system performance risk.

➢ *Bank Financing*:

In response to growing interest in solar PV solutions from industrial and manufacturing energy consumers, several local banks have structured innovative financing arrangements. Absa, Nedbank, Standard Bank and FNB offer loans for the installation of solar PV systems, the main instruments being term loans, hire purchase agreements, asset and real estate financing, commercial collateralized loans to mortgage debts and access obligations. Commercial loan terms vary from 5 to 10 years, while the collateral required for debt financing is often secured by the underlying property and system. The challenge in obtaining financing from the banking sector is that the banking sector is not specialized in solar ownership, so solar remains at risk and monthly repayments are fixed regardless of the performance of the system, further depleting valuable credit lines with banks (Solar Africa, 2021).

IV. PUBLIC-PRIVATE PARTNERSHIPS (PPPS)

According to Africa.com (2023), public-private partnerships (PPPs) have become a widespread approach to delivering sustainable energy projects, however, PPPs are complex structures and require experience and effective communication to be successful. If properly implemented, it can significantly contribute to achieving sustainable energy security in Africa. The Green Energy Africa Summit 2023 was held at the Cape Town International Conference Centre (CTICC2) from 10-11 October 2023. This is an exceptional event known for advertising political reform and adjusting Africa's natural resources, and plays a decisive role in implementing fair energy transition. At the same time, one is trying to guarantee that Africa will continue to be an attractive and competitive place for global financial investment. Various parties and interested managers will participate in the PPP in order to facilitate discussions during the summit.

According to the complete subject of "unlocking the sustainable energy potential of Africa", Summit 2023 Green Energy Africa offers a unique platform for interested parties throughout the energy value for cooperation, offers innovative solutions and establishes Partnerships that unlock

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the vast socio-economic potential of Africa. A defining moment of the summit will be examining the regulatory framework needed to attract clean energy investment in Africa. If Africa wants to truly unlock its sustainable energy potential and achieve energy security for its people, it cannot do it alone. Given the physical and social structure of the continent, the needs of its people, and the nature of the global energy market, partnerships need to be forged. And one of the defining features of modern energy partnerships is the public-private partnership.

PPPs are fundamental to achieving a just energy transition in Africa, and are recognised in many of the most important energy agreements. There is only one example of the announcement of energy transition partnership (JETP) in COP 26 between South Africa, France, Germany, the United States, and the EU in COP 26. The contract recognized that the $ 98 billion financial requirements of $ 98 billion in five years need to come from both public and private sector to start the 20 -year energy transition in South Africa. The transaction includes the mobilization of $ 8.5 billion to start the first stage of the program, which will also include an extended PPP (Africa.com, 2023).

V. RENEWABLE ENERGY

The 2003 Renewable Energy White Paper is one of the policy documents that laid the foundation for the promotion of renewable energy technologies such as solar photovoltaics, hydroelectricity, biomass, wind power, etc. This policy document sets out a 10-year target on how renewable energy technologies can diversify the country's energy mix and provide cleaner energy. The objectives of the 2003 Renewable Energy White Paper were (Ministry of Mineral Resources and Energy, 2023):

- Ensure that a fair level of national resources is invested in renewable technologies.
- Direct public resources towards the deployment of renewable energy technologies.
- Introduce appropriate tax incentives for renewable energy and create an investment climate for the development of the renewable energy sector.

In line with the country's commitment to transition to a low-carbon economy, the Integrated Resource Plan (IRP 2010), promulgated in May 2011, set a more ambitious target of achieving 17,800 MW of renewable energy by 2030 for electricity. Within this 20-year planning period, approximately 5,000 MW was expected to be commissioned by 2019, with a further 2,000 MW to be commissioned by 2020. The implementation of IRP 2010 will be through ministerial orders regulated by the Electricity Regulations under the Electricity Regulation Act No. 4 of 2006 on New Generation Capacity. Already in 2017, 6,422 MW of electricity was purchased from 112 independent renewable power producers (IPPs) using a bidding process called the “auction window.” Of this total, 3,162 MW of generating capacity from 57 IPP projects had been connected to the national grid as of the end of June 2017 (Ministry of Mineral Resources and Energy, 2023).

At the end of 2010, a supply program, which is independent of renewable energy, was created by the Ministry of Energy (DOE) in combination with the Development Bank (DBSA) in the National Treasury and South Africa. REIPPPP is one of South Africa. An urgent intervention of the government to enhance the potential of national power generation. Its main objective is to secure private sector investment in the development of new generating capacity, thereby realising the policy decision to diversify South Africa's energy mix, articulated in the 1998 White Paper on South African Energy Policy. The REIPPPP programme is also designed to contribute to broader national development objectives such as job creation, social upliftment and economic transformation, primarily through greater economic ownership. Later, the IPP office was created with the implementation of this program and a power of attorney to achieve a wider goal (mineral resources and energy Ministry, 2023).

VI. RENEWABLE ENERGY PRODUCERS

The South African renewable energy market is moderately consolidated. Some of the major players (in no particular order) in the market are Mainstream Renewable Power Ltd, Segen Solar (Pty) Ltd, EDF Renewables, Juwi Renewable Energies (Pty) Ltd, and Acciona Energia SA (Mordor Intelligence, 2023).

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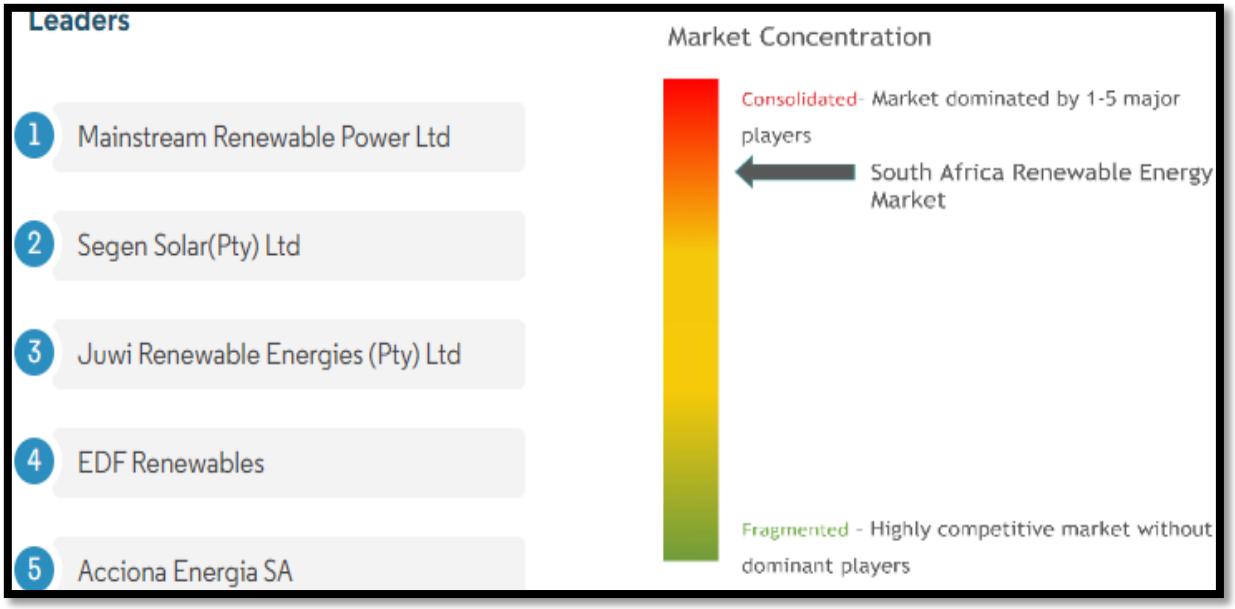

Fig 1: The South African Renewable Energy Market
Source: Mordor Intelligence (2023)

VII. TAX REBATES

According to PKF South Africa (2023), there are tax rebates for solar panels and renewable energy projects in South Africa. It is proposed to introduce a new section 6C of the Income Tax Act No. 58 of 1962 (the Act) that would allow individual taxpayers to claim a deduction of 25% of the price of new and unused solar photovoltaic (PV) energy (first used between 1 March 2023 and 1 March 2024), up to a maximum of R15,000 per individual taxpayer. The refund applies only to new and unused photovoltaic panels that are installed and connected to the main electrical panel of the individual taxpayer's residence and used primarily for domestic purposes. There appears to be no restriction on ownership, so if either the landlord or tenant bears (pays) the cost of such panels, they are eligible to claim the refund. Certified solar panels must have a minimum output of 275 watts per panel. To qualify for the discount, you must provide a certificate of compliance with the requirements of the Electrical Installations Code. However, the rebate does not apply to the cost of installation. Additionally, the rebate does not cover any other components of the solar system, namely batteries, inverters, fittings, diesel generators or portable panels (BDO South Africa, 2023; PKF South Africa, 2023).

It is recommended that in order to limit the queries from SARS in claiming such rebate that the individual requests the service provider to provide a separate VAT invoice for the costs of the solar PV panels and make payment thereof separately. It may be prudent to ensure that the details of the individual claiming the rebate are duly recorded on the invoice and the proof of payment. Before 1 March 2025, if an individual dispose of photovoltaic (PV) panels other than through the sale of the residential premises on which they are fitted, the amount of the photovoltaic (PV) tax credit allowed (25% of the cost or R15,000) must be considered as an additional amount to the ordinary tax payable by the individual in the year of disposal assessment (PKF South Africa, 2023).

Moreover, PKF South Africa (2023) confirms that South Africa is strengthening its business incentive programme for renewable energy projects. This business incentive applies to all taxpayers carrying on a business, including companies, sole traders and business trusts. A new section 12BA is proposed to be introduced into the Act to provide for an extension of the deduction in respect of new and unused machinery, equipment, fixtures, tools and articles used in the production of renewable energy that is used for the first time for the purposes of a taxpayer's business on or after 1 March 2023 and before 1 March 2025 to generate electricity from wind, solar photovoltaics, concentrated solar energy, hydroelectricity or biomass, including organic waste, landfill gas and plant material (BDO South Africa, 2023; PKF South Africa, 2023).

Further, section 12BA of the Act is proposed to be applicable where machinery, plant, implements, appliances, goods or improvements are attached or fixed to a concrete or other foundation or supporting structure. The deduction will be equal to 125% of the cost incurred by the taxpayer for the acquisition of the immovable property. Where an asset is let by a taxpayer under a lease other than an operating lease as defined in section 23A (1), no deduction is allowed unless the lessee (taxpayer) under such lease derives income from a commercial activity, and the lease term must be at least five years or such shorter if the taxpayer proves that it corresponds to the useful life of the asset. If, before 1 March 2026, a taxpayer disposes of an asset in accordance with section 12BA of the Act, the taxpayer's income includes the recovery of 25% of the cost of that asset under section 12BA and any additional recovery applicable under section 12BA (BDO South Africa, 2023; PKF South Africa, 2023).

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUN1798

VIII. RENEWABLE ENERGY CHALLENGES

South Africa is one of the main energy-driven economies in the world, with around 90% of electricity generated from its main resource, coal. This puts South Africa's energy system on a highly unsustainable path, undermining the economy's long-term potential for growth and prosperity. An alternative to energy obtained from the combustion of fossil fuels is a renewable energy. Good news is that in recent years, renewable energy technology has increased, and it has become the cheapest energy form. The bad news is that it continues to face political resistance from those with vested interests in the fossil fuel industry. This is disappointing given the country's wealth of natural resources needed for clean energy production. Therefore, the important issues of the renewable energy source in South Africa are as follows (BDO South Africa, 2023, PKF South Africa, 2023):

- The shortage of national funding in the regional energy infrastructure is a rooting that is rooted in social inequality.
- Insufficient power sources restrict the use of lighting, new industrial leather, and social systems that relieve the quality of education and economic development. Several studies have highlighted the inter-integration between energy accessibility, consumption and per capita income.
- Frequent power outages and supply constraints are associated with high reliance on expensive tethered diesel generators.
- High mortality rates across the continent are also due to persistent household reliance on biofuels.
- Lack of public investment in the energy sector reflects macro- and micro-economic challenges such as underdeveloped capital markets, poor financial management and concentrated government ownership in the energy sector.
- Although government funding is the main source of financing for energy projects in the region, investment in new capacity is limited.

IX. SOURCE OF RE FINANCING MODEL

➢ *Financing for Empowerment*

The other side of debt financing needs - equity financing for empowerment - is relatively expensive and already rare. Whether it's a corporate partner in economic empowerment or a community foundation, empowerment organizations often raise equity capital through debt, putting 10% down in cash and spending the remaining 90%. Currently, IDC and DBSA provide the bulk of this financing in the form of preferred shares or conventional loans (DEA, 2017).

➢ *Financial Debt*

Today, local banks have different views regarding renewable energy financing. Nedbank, the largest bank by exposure, representing approximately R18 billion in REIPPPP-related project debt, decided to maintain its own exposure to date, while Standard Bank and CNY decided to distribute it by selling their debt (debt syndication) (DEA, 2017).

➢ *Private Finance (Private Partnership, State)*

Action financing and ownership sources emphasize a wide range of participation and advantages from these investments. 48.8 billion rubles from this total investment. For foreign investment and financing (Figure 2.1). As reported by the South African Bank (SARB) (DEA, 2017), it is more than half of the internal PII (22.6 billion rubles) involved in South Africa in 2015.

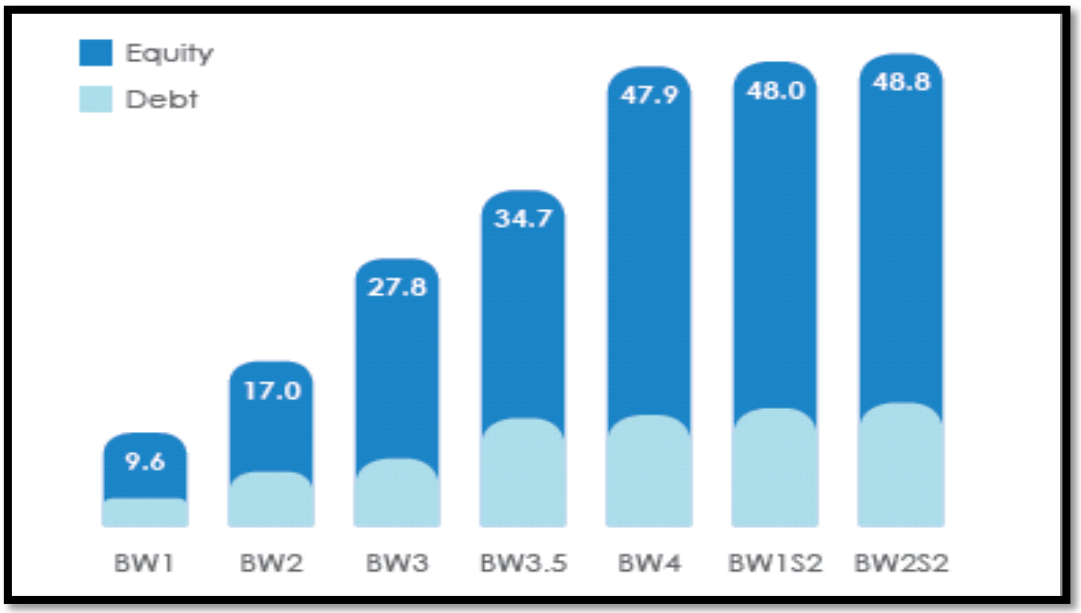

Fig 2: Total Foreign Direct Investment Attracted of Total Committed Investment.
Source: DEA (2017)

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➢ *Government Subsidy*

The main players include trade and industrial sector, energy, environmental issues, state -owned companies, ESKOM and National Energy Regulator. Other organizations are particularly indispensable for local governments and state governments, and handle the application and permission for reasoning (DEA, 2017).

➢ *Subsidies For Municipal Infrastructure*

To access this grant, municipalities must develop an approved infrastructure improvement plan linked to an overall development plan. The Department of Cooperative Governance and Traditional Affairs (COGTA) administers the fund and coordinates support for the program at the national, provincial and local levels (DEA, 2017). For example, the Gauteng Department of Infrastructure Development launched a rooftop solar PV deployment program as part of its integrated demand management plan in 2015 and registered it as a potential public-private partnership with the Treasury National (NT) (DEA, 2017).

X. SUMMARY OF LITERATURE REVIEW FOR FINANCING MODEL

Study	Study Topic	Countries Covered	Period Covered and Frequency	Methodological Issues	Summary of Findings
Rivhatshinyi N Kamara (2016)	Comparative study for renewable energy financing option in Brazil, China, Indian and South Africa.	4 Countries (China, Brazil, Indian and South Africa.)	2004-2016	Multivariable Model (M-Egarch) with constant correlations.	The options employed: • Decrease credit risk and transaction cost for the renewable energy activities. • The use of concessional debt at rates below market rates to incentivise growth.
Xiaohuan Lyu and Anna Shi (2018)	Research on the Renewable Energy Industry Financing Efficiency Assessment and Mode Selection.	1 Country (China)	2008-2015	BC2 Model (Variable Returns to Scale) and C2R Model (Constant Returns to Scale)	The study findings: • Renewable industry has been ignored resulting in redundancy and limited focus on financing options.
C. Ojia, O. Soumonnib, K. Ojah (2016)	Financing renewable energy projects for sustainable economic development in Africa.	Southern Africa and North Africa. East Africa, West Africa, and Central Africa	2012-2015	Chi-square test is essentially an analysis of the associations between selected (test) variables (Quantitative)	• Project finance is the preferred option of financing among Renewable Energy Projects (REP) financiers, while REP developers mainly prefer corporate finance. • Financing and investment barriers such as the lack of appropriate credit reporting systems and project scalability
CK Oji (2015)	Models of financing renewable energy for sustainable development: An African perspective.	22 African Countries. (Including South Africa)	1993-2009	Combination of Quantitative and Qualitative Methods.	• Traditional financing methods have been largely ineffective in promoting the development of REPs in African countries
S Schwan (2011)	Overcoming Barriers to Rural Electrification	1 Country (Bangladesh)	2011	Combination of Quantitative and Qualitative Methods.	• Micro-energy loans overcome the lack of access to credit and spread high initial upfront costs over a longer period, which enhances the affordability of micro-energy systems.
GK Sarangi (2018)	Green energy finance in India:	1 Country (India)	Case Study based REP	Qualitative method.	• Government should act as a facilitator and should devise

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUN1798

	Challenges and solutions.		Finance in India.		innovative policy mechanisms not only in terms of introducing innovative financing instruments but also creating a conducive environment that minimises the associated risk factors
SC Bhattacharyya (2013)	Financing Energy Access and Off-grid Electrification: A Review of Status, Options and Challenges	Focus on African Countries.	2009-2013	Combination of Quantitative and Qualitative Methods.	• The funding gap will be more acute in the least developed countries where the energy access level is very low and where the traditional barriers to investment are more profound. • The study highlighted that even the multilateral funding agencies actively involved in the development of poorer countries have not paid adequate attention to energy access funding and have focused on large projects and large countries.
Sebastian Fritz-Morgenthal, Chris Greenwood, Carola Menzel, Marija Mironjuk, Virginia Sonntag-O'Brien, (2009)	The global financial crisis and its impact on renewable energy finance	3 Countries (Germany, Italy, and the Czech Republic)	2008	Combination of Quantitative and Qualitative Methods.	• The majority expects that the market volume of private equity, venture capital, project finance and capital markets will decrease further in the foreseeable future, while government financing of renewable energy will increase.
Yose Rizal Damuri Raymond Atje (2012)	Investment Incentives for Renewable Energy: Case study of Indonesia.	1 Country (Indonesia)	2002	Desk research and structured interviews. (Qualitative method.)	• The Indonesian government's continuing subsidisation of gasoline and under-pricing of electricity generation provides incentives in direct contradiction to investment incentives for renewable energy. • Lack of identified controls/measures to help project developers apply for finance or to help banks assess renewable energy projects.
Kenny Baumli Tooraj Jamasb (2020)	Assessing Private Investment in African Renewable Energy Infrastructure: A	5 Countries. South Africa, Kenya, Nigeria, Cameroon, and Tunisia	2020	Desk research and structured interviews. (Qualitative Method)	• Public/Government funding in the region is not sufficient to provide basic energy services and to match the expected increase in demand

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	Multi-Criteria Decision Analysis Approach				correlated with population growth in the coming decades. • South Africa emerged as the preferred investment destination for renewable energy projects, followed by Kenya, Tunisia, Nigeria, and Cameroon, respectively.

XI. CONCLUSION

The chapter introduced the literature on various aspects of renewable energy financing models and began with a literature review on the relationship between financing models or options. Theories from the literature suggest that innovative financing models could play a key role in facilitating the widespread adoption of RET in Gauteng and other provinces in South Africa. This suggests the need for further implementation of innovative financing mechanisms to impact communities through increasing access to energy to ultimately promote economic development.

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