Journal of African Interdisciplinary Studies (JAIS): **ISSN 2523-6725** (online)
December 2021 Vol. 5, No. 12

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs)

By

[1]Karara, Nelisiwe (PhD Student), [2]Tsvere, M (Prof) [3]Tukuta, M (Prof), & [4]Kajongwe, C (PhD)
[1, 2 & 3] Chinhoyi University of Technology, P. Bag 7724 Chinhoyi, Zimbabwe Email:
[1]lisiwekarara@gmail.com Phone Number: +263 772351236
[2]paidamoyo2016@gmail.com Phone number: +263 77 4034 65
[4]Manicaland State University of Applied Sciences Guthrie Road-Off Vumba Road,Private Bag 7001,Fernhill,Mutare
Email: collen.kajongwe@staff.msuas.ac.zw / codzakajongwe@gmail.com Phone Number: +263 774198 231

Abstract

Energy is vital to modern economies, and empirical evidence suggests that it has a material and positive causal effect on economic growth and development. However, this study sought to explore renewable energy in Zimbabwe prior to the pandemic and implications for development for energy Small to Medium Size Enterprises (SMEs). The study was qualitative in nature focusing on 20 energy SMEs in Harare Metropolitan Province. Interview guide was used to collect data. Respondents were selected randomly targeting managers and senior employees. The study found that off grid solar is vital for post-COVID 19 recovery in Zimbabwe and in promoting long term inclusive and sustainable development through the provision of clean energy access. This study concludes that solar energy can play a critical role in driving post COVID 19 recovery in Zimbabwe. However, in order to facilitate this, strong collaboration will be required from governments, the private sector, the international community and local and international financiers. A number of measures can be put in place to ensure that investments both in basic solar equipment and productive use solar equipment are driven as fast as possible. The measures include significantly reducing red tape, reducing the number of permits required and the time it takes to procure required permits for solar energy. Further research should explore the effects of policy frameworks on the financing gap for energy SMEs in Zimbabwe.

Key Words: Covid-19 Pandemic, Renewable energy, Zimbabwe, Development Small to Medium Enterprises (SMEs)

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Journal of African Interdisciplinary Studies (JAIS): ISSN 2523-6725 (online)
December 2021 Vol. 5, No. 12
Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs)

By

Karara, Nelisiwe (PhD Student), Tsvere, M, Tukuta, M (Prof) & (Prof) &Kajongwe C (Dr)

Introduction and Background of the study

Despite decades of international efforts, energy poverty is still rampant in the developing world. Nearly one-fifth of the global population, or 1.3 billion people, lack access to electricity (IEA, 2020). However, solar power energy is rapidly becoming the mainstream alternative energy source in Zimbabwe. Many businesses can resort to solar energy which is not only affordable but the most untapped resource in the country. The coronavirus disease 2019 (COVID 19) global pandemic has brought unprecedented shocks across all aspects of society from stressed healthcare systems, to closure of all non-essential activities, disruption to education and significant reduction in government revenues (IEA,2020). The pandemic is also having a serious impact on energy Small to Medium Enterprises (SMEs).

SMEs play an important role in job creation and poverty reduction (Ayyagari et al. 2011; Bauchet & Morduch 2012). SMEs are seen by many national governments and international development organizations as important engines of innovation, economic growth, employment, and poverty reduction (Bauchet & Morduch 2012). However, despite their vital social and economic role, SMEs in developing countries face significant growth constraints that appear to be linked with a lack of access to finance (Beck & Demirguc-Kunt 2006). This financing gap could be the result of an overall absence of resources or structural problems in distributing available resources. There is evidence that, on a global level, there are not enough international funds available to develop access to clean energy (Bhattacharyaa 2013). However, this absolute deficit sufficiently explains the specific challenges faced by energy SMEs in developing economies.

Renewable energy is the only energy source to have experienced growth in the first quarter of 2020 which growth was driven by output of new wind and solar projects that were completed in 2019 (World Bank, 2020). Akrofi and Antwi (2020) avers that, renewables receive priority on national grids and are not requested to adjust output to match demand and as a result the share of renewables in the electricity generation mix rose significantly by about 1.5% in the first quarter of 2020. There have been impressive developments in the utility scale solar segment across Africa with South Africa and Algeria leading the market. South Africa is home to the majority of utility scale power plants in Africa. The largest, Solar Capital De Aar, is located in the Northern Cape and comprises two power plants with a combined generation capacity of 175MW and is formed on 700,000 solar panels (Power Technology, 2019). Algeria has the second highest number of utility scale solar PV plants and dominates the solar PV market in North Africa. The largest solar power plants in Algeria with generation capacities of 90MW each are the High Plateuas East, Adrar and High Plateaus Centre, Adrar (Unlocking Solar Capital Africa, 2020). The largest solar power plant in North Africa is located in the Aswan Province in Benban, Egypt. The solar park comprises three power plants with a combined 165.5MW generation capacity (EcoMENA, 2020). This has been diagrammatically represented in figure 1.1.

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

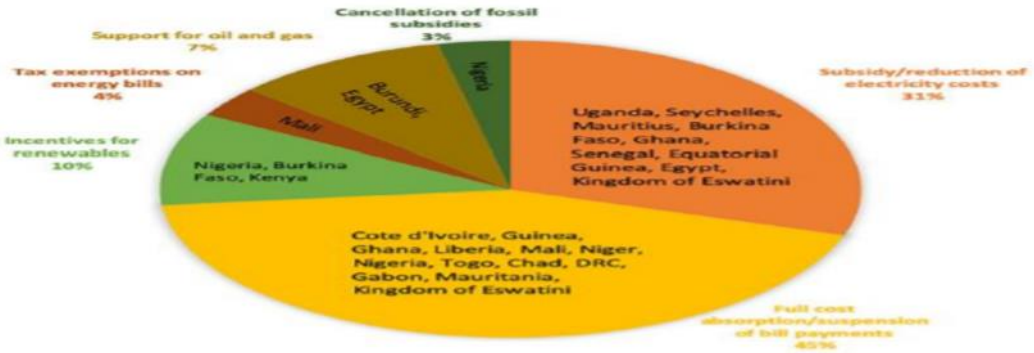

Figure 1.1. Immediate Energy Sector COVID-19 Responses in Africa
Source: Akrofi & Antwi, (2020)

As countries worldwide begin to contemplate post COVID 19 economic recovery plans, energy has again taken a centre stage on the agenda (Aljazeera, 2020). According to Adair-Rohani et al (2018), one in four SMEs facilities in sub-Saharan Africa have no access to electricity and only 34% have access to reliable electricity. Beyond electricity access in SMEs facilities, the statistics are even more bleak; an estimated 60 Percent SMEs in Africa do not have access to electricity representing about two thirds of the continent's approximately 1 billion population (IEA, 2018). Access to reliable electricity has proved particularly crucial in responding to the COVID 19 pandemic. Not only is electricity required to power SMEs facilities, it is necessary to support work from home measures being implemented in many companies and organisations across Africa following lockdown measures (IEA, 2020).

There has been a significant rise in investments directed towards renewables globally. REN (2020) shows that investment in renewables in 2019 was three times that of investment in coal, nuclear and natural gas combined. South Africa's fiscal status has been deteriorating for the past decade, and the response to the Covid-19 pandemic has caused further and substantial deterioration. Eskom's inability to supply the country with adequate electricity and the resultant negative impact on economic growth, both before and following the pandemic, has had a profoundly adverse effect on the tax base. Secondly, the constant bailouts that government has provided the SOEs have had a direct negative impact on the fiscus. Diversifying South Africa's energy base further by including more renewable energy generation can lead to a positive impact on the fiscus through at least two channels. The first is by positively impacting economic growth and development and hence the growing tax base. The second is by the mere fact that investment in renewable energy plants is largely undertaken by the private sector. It has been shown that investments in the IPPPP programme have been funded through project fi nance, equity, and corporate finance (Eberhard and Naude (2017). However, this study focused on energy SMEs in Zimbabwe. Energy SMEs are not very common, the energy SME market is relatively small; as a result, energy SMEs are often not very well understood by the business sector.

Statement of the Problem

The energy sector is meant to be the bedrock of a nation's economy‖, in addition to the fact that, economic development and Growth Domestic Product finds a common factor to compare with a country's energy output‖, is not new. Therefore, for a productive economy and for rapid and secure economic advancement, the country must pay maximum attention to the optimal development and utilization of her energy resources and to the security of supply of

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

her energy needs. To achieve this, a country therefore requires an efficient and productive energy sector investment. However, there is dearth of information on the impact of Covid 19 Pandemic on energy SMEs and implications on development in Zimbabwe which this study seeks to establish.

Research Objectives

1. To assess the impact of Covid 19 Pandemic on energy SMEs and implications on development in Zimbabwe

Methodology

This study sought to explore renewable energy in Zimbabwe prior to the pandemic and implications for development for energy Small to Medium Size Enterprises (SMEs). The study was qualitative in nature focusing on 20 energy SMEs in Harare Metropolitan Province. Interview guide was used to collect data. Respondents were selected randomly targeting managers and senior employees.

Theoretical Framework

The study is anchored on the Resource Based View (RBV) approach. A resource-based description of firm behaviour might note that firms in industries with slow turnover in capital equipment may resist adopting energy-saving technologies because of the high cost of retrofitting existing equipment, while firms in industries with high rates of reinvestment may routine incorporate energy savings with each new round of technology. Similarly, a firm with capabilities that allow it to sell differentiated products (for example, consumer electronics or personal-care products) might be likely to market energy-efficient products aggressively, if it perceived a chance to gain competitive advantage. Concern for maintaining positive reputations may lead even laggard firms to invest in energy efficiencies if public or customer concern over climate change increases.

Review of Related Literature

The impact of Covid 19 Pandemic on energy SMEs and implications on development in Zimbabwe

The COVID-19 pandemic began with the first discoveries of pneumonia of unknown origin by locals at the end of December 2019 in Wuhan. China informed the World Health Organization (WHO) about an unknown pneumonia disease outbreak on 31 December 2019. The WHO announced that the outbreak had become a pandemic on 11 March 2020. Afterward, many countries began to impose quarantine regimes or restrict citizens' movement. The decision to introduce restrictions against the COVID-19 pandemic is a classic example of making decisions in the face of uncertainty.

According to World Bank Report (2020) renewable energy has proved to be the most resilient source. This has been due to a rise of about 3% in renewable electricity generation after more 100GW of solar PV and about 60GW of wind projects were completed in 2019. Havenhill Synergy (2020) asserted that the resilience of renewable energy to lower electricity demand is further aided by the fact that renewables are generally dispatched before other sources of energy due to their low operations costs and favourable regulations that accord them priority. However, the sector has still impacted significantly by the pandemic. China, which is the leading global producer and supplier of renewable energy technologies especially for solar PV, was one of the countries hardest hit by the pandemic. Solar PV manufacturing

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

facilities in China ceased or reduced production as a result of COVID 19 related lockdowns in several key provinces (IEA, 2020). According to World Bank Report (2020) manufacturing facilities in Europe which is a major manufacturing hub for wind turbines experienced disruptions in supply of parts coming in from China and manufacturing facilities in hard hit countries such as Italy and Spain shut following strict contained measures.

The onset of the COVID-19 pandemic has majorly affected the way in which energy SMEs are able to function, from trade to operations. National lockdowns, social distancing measures, and the restriction of movement of people and goods have changed the ways firms do business and, in some cases, have stopped business altogether. According to a survey by KBS, 73% of companies opted to change their business plans, either by developing new products or repositioning entirely, considering the pandemic (Stephan et al., 2020). Following the first wave of lockdowns in the spring of 2020, two in five energy SMEs adjusted their business plans as they anticipated further restrictions and potential falls in revenue, and 10% of small companies pivoted to a new market (Ruzicka, 2020). Some firms have even been able to repurpose their production operation to create masks, medical equipment, and other PPE (Juergensen, 2020).

Due to COVID 19 pandemic energy SMEs are using diversification strategies by offering new products and services in closely associated business sectors seems to be a growth option for enterprises in renewable energy (Stephan et al., 2020). Often energy is additional business activity supporting the main business. In some cases, there were also tailored-solutions of heating, cooling, and energy efficiency for different market segments: small private customers, public sector and the industry. Renewable energy provides opportunities for multiple products and services, as the example of Swedish Glommers Miljöenergi indicates. The small-size enterprise, located in Glommersträsk, has business activities in wood pellet and reed canary grass briquette production and selling to domestic fuel and animal bedding markets, heat entrepreneurship based on biomass fuels, re-selling of biomass burners (IEA, 2020).

The World Bank Report (2020) pointed that the economics of scale on energy SMEs (in renewable energy) during COVID 19 can be based on gradual increase of production volumes, establishment of new production units, growing along the main customers, or acquisitions. Akrofi & Antwi (2020) added that acquisitions can include other companies/production units at the same level of value-addition (horizontal integration) or those located at a different level of the value-addition chain (vertical integration). Vertical integrations can provide benefits of controlling the whole energy supply chains, and thus receiving added value of energy (from resource into services). For renewable energy production, strategic locations are significant, both in terms of access to the resource, and in terms of accessing markets (either transmission or end-users). Finding synergies, through clustering or industrial symbioses, can also provide scale-benefits but also access to resources, information and collaboration networks. Joint ventures or strategic alliances can also be applicable strategies for accessing technical expertise, energy resources (through landowners) or investment funds (Akrofi & Antwi, 2020).

IEA (2020) pointed that due to COVID 19 pandemic, energy SMEs sector benefits strategies for reaching new customers and accessing new markets. IEA (2020) added that this includes expanding the sales and export channels through new partners and networks, and can result into new exports or license-based manufacturing or re-selling. Joint ventures or strategic alliances was also be applicable growth strategies, especially for energy SMEs accessing new markets through international collaborator during COVID 19 era (Ruzicka,

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

2020).Ruzicka (2020) argue that during COVID 19 Pandemic energy SMEs are also benefitting of the scale-economies through increasing the number of service cases (and service efficiency).

Results and Discussion

Response Rate Analysis

The presentation in Table 1.1 entails the response rate analysis in the research study. As indicate in Table 1.1, of the 20-interview guide administered taken from the study sample 50% were not returned whilst 50% were returned.

Table 1.1: Response rate analysis

Description	Number of Interviews administered	Number of Interviews administered	Percentage of response rate (%)
SMEs owner managers and senior employees	20	10	50

Source: Survey (2021)

The study response rate of 50% imply that SMEs owners and managers were paying allegiance to the crux of the matter affecting their business growth and sustainability.

Position held in the Firm

Specifically, based on the results from the data gathered, respondents in the SME sector are in a favorable situation. According to the results of figure 1.2, respondents from the questioned companies were mostly business owners, who constituted 76 percent of the total, as opposed to managers, who constituted 24 percent of the total.

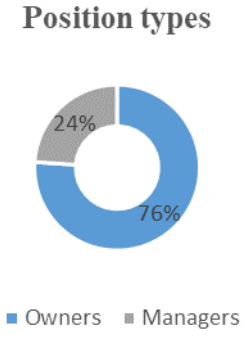

Figure 1.2: Position Types

Source: Survey data (2021)

The study's findings, as shown in Figure 1.2, indicated there were more owner-operated energy SMEs than manager-operated SMEs. The findings indicate that the majority of energy SMEs are managed by their owners. This may be related to trust problems, with owners being less inclined to trust others to managed or manage their companies. Perhaps the results also indicate that, since the companies were still small and medium, company owners wanted to be

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

hands-on, overseeing the business while also reducing management expenses, as the owner would double as manager.

Level of Education

As shown in Figure 1.3, the majority of participants had completed a postsecondary degree of education, ranging from diploma to doctorate studies. This includes 41% of respondents with a Bachelor's degree, 29% with a Master's degree, 16.4% with a Diploma, and 4.5 percent with a Doctoral degree. Additionally, the findings showed that 2.7 percent had completed an O level, 4.5 percent had completed an A level, and just 1.8 percent had completed a basic level of schooling.

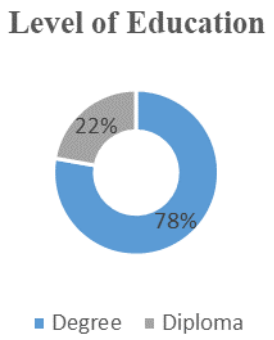

Figure 1. 3: Respondents' level of education

Source: Survey data (2021)

According to study results as shown in Figure 1.3, the majority of company owners or managers have earned at least a diploma or Degree As indicated in Figure 1.3, 78% respondents had attained a Degree while 22% had attained Diplomas.These results suggest that those in Zimbabwe who establish or manage energy SMEs are highly educated, which may indicate that they have plans in place to maintain their companies. Additionally, the findings indicate that, as a consequence of Zimbabwe's high unemployment rate, a large number of highly educated individuals have chosen to start their own companies and use the expertise they gained to run them. This may be taken as an indication that Zimbabwe's jobless graduates have heard the call of entrepreneurs and are not expecting to be hired by big companies. The findings are corroborated by (ZimStat Agency, 2012), which stated that Zimbabwe's literacy rate is very high, exceeding 90%. Additionally, the majority of Zimbabweans place a premium on education.The findings corroborate the Labour Force Survey (2011), which stated that Zimbabwe's literacy rate is very high, exceeding 90%. Additionally, the majority of Zimbabweans place a premium on education. The respondents' high level of education is further confirmed by the literature. Zimbabwe invests 10% of its gross national product on education, the highest rate in the world, according to the literature (Chidzero, 1989). Education has been critical in the development of skills in Zimbabwe. Zimbabwe has a high literacy rate of 91.4 percent (UNESCO, 2009). For example, between 1992 and 1999, the literacy rate of 15–24-year olds increased from 95% to 98%. (UNDP, 2003). This is due to the government's prioritization on education both before and after independence.

The results indicate that, although education is critical for skill development, as shown by the maturity of the responses, it does not serve as a barrier to entrepreneurial efforts within the population, as demonstrated by respondents who engage in entrepreneurial activities. The high level of participation among individuals with higher degrees may be ascribed to

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

Zimbabwe's high unemployment rate, which has pushed people into survival mode. Thus, the differences in educational attainment may be explained by the SME sector's preference for work experience over professional qualifications.

The impact of Covid 19 Pandemic on energy SMEs and implications on development in Zimbabwe

This section presented data based on thematic analysis from responses given by respondents in the study based on major research objective. Based on the assessment of Covid 19 Pandemic on energy SMEs and implications on development in Zimbabwe respondent B1 had this to say:

> The ongoing lockdown and travel restriction measures have resulted in slowed transport, trade and economic activity and this has had a severe negative impact on the energy sector.

Respondent B2 also commented that:

> Due to movement restrictions and closure of ports, off-grid energy SMEs are facing significant challenges in obtaining equipment and are unable to access project sites. This has delayed a number of renewable energy projects in the county.

This response was in line with literature. According to the International Energy Agency (IEA) (2020), road transport dropped by between 50 -75% and aviation activity has come to a halt in some regions and declined more than 90% in some European countries. As a result, global energy demand is estimated to have declined by 3.8% in the first quarter of 2020 with much of the impact being felt in March as movement restrictions were enforced in Europe, North America and Asia. Assuming that lockdowns last for several months and that lifting of lockdown measures is slow and gradual, the IEA estimates that global energy demand could fall by 6% this year overall, five times what was lost during the 2008 financial crisis. Respondent B4 also had this to say:

> The distributed and decentralised PV market has also witnessed some notable developments although it remains the least developed market in comparison to the utility scale and off grid markets.

Another respondent B10 asserted that:

> Off grid solar has scaled rapidly over the past decade in Zimbabwe primarily driven by household lighting and basic appliances. In Zimbabwe, solar lighting products have dominated sales among energy SMEs.

Respondent B15 commented that:

> The Off-Grid energy SMEs sector has largely focused on consumptive use of energy however; the industry is increasingly turning towards productive use leveraging solar energy (PULSE) products. PULSE encompasses a wide range of products including

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

> solar water pumps and cold storage for agricultural applications and refrigeration and other small appliances for microenterprises.

Another respondent B8 also had this to say:

> Productive use of power enables or enhances income generation for rural households and microenterprises by amongst other things, mechanization of commercial activities that are otherwise performed manually. In particular, these appliances have the ability to impact agriculture on which rural households in Zimbabwe rely. There is a growing application of solar irrigation at small holder farmer scale in Zimbabwe. Product innovation coupled with declining prices have made micro application for DC pumps more viable in Zimbabwe. Solar water pumps for irrigation are available in Zimbabwe registering several distributors.
>
> Inference to literature indicate that most African countries are spearheading the support of energy SMEs through policies due to their developmental contribution. According to IRENA (2019) there has also been an increase in use of renewable energy auctions for larger projects in Africa as policymakers seek to procure renewable energy-based electricity at the lowest prices. The use of auctions has contributed to creating market certainty as hitherto lack of clear policies resulted in mixed messages being sent to the private sector. South Africa has been leading this development having introduced the Renewable Energy Independent Power Producer Procurement Programme in 2011. This was followed by Uganda's GET FiT solar facility auction in 2014 and Zambia's Scaling Solar auction in 2015 and Zimbabwe in 2020.

Another respondent B5 had this to add:

> Energy has been crucial in the fight against the COVID pandemic. Reliable energy supply by SMEs ensure that core systems for the management of health programs function effectively. Furthermore, clean electricity can address some of the health risks that may make people more vulnerable to respiratory diseases such as COVID-19.

Inference to literature (Africa Progress Panel - Africa Progress Report, 2015) show that while efforts to trade energy and integrate grids are locally supported through existing regional power pools (Eastern Africa Power Pool and the Southern African Power Pool) the AfCFTA provides a new platform to expand these efforts regionally and pursue energy development to relieve the energy infrastructure restraint. Improved and increased energy trade and energy integration is expected to boost economic development in Africa by reducing transaction costs and enabling market and economic collaboration and ultimately accelerating investment incentives.

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

Conclusions

The COVID 19 pandemic continues to wreak havoc around the world and its effects are likely to linger for the foreseeable future. Renewable energy is playing an important role in the fight against the pandemic and can play an even bigger role in accelerating inclusive and sustainable development post COVID 19. Businesses in Zimbabwe must innovate to survive the impact of COVID-19 which impact is likely to be felt for the foreseeable future. Energy SMEs can assist businesses to save money and hedge against energy costs for sustainable development.

Recommendations

Zimbabwe government should also consider policies that protect the local manufacturing industry from unfair competition from imported goods particularly influx of counterfeit energy products. Local manufacturing also brings down costs. Therefore, the government should target direct and indirect investments to operationalize assembly plants and achieve economies of scale that can bring down the cost of solar systems considerably. The state should mobilise public financing to trigger investment in enabling infrastructure for renewable power in particular investments in smart grids for the support of SMEs in energy. This can partly be achieved by redirecting public finance away towards energy transition-related investment. Creating awareness programmes and making key information of solar products and the solar industry can help investments in the sector. The disruption of supply chains of renewable energy technologies as a result of COVID 19 is one of the key lessons for the Zimbabwean government to focus on the localization of manufacturing of renewable energy technologies. In order to promote off grid solar, decentralized solar applications and utility scale solar, Zimbabwean government with the aid of internationals actors need to design policies aimed at, amongst others things, stimulating local industry, encouraging research and development to promote innovation, increasing awareness, promoting productive use solar appliances, developing information databases, building human capital, building institutional capacity, reducing red-tape, simplifying land rights and attracting private local and international finance.

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues

Citation: Karara, N; Tsvere, M; Tukuta, M & Kajongwe, C. (2021). Assessment of Covid 19 Pandemic on Renewable energy sector in Zimbabwe and implications for development of Small to Medium Enterprises (SMEs). *Journal of African Interdisciplinary Studies.* 5(12), 23 – 33.

References

Africa CDC (2020) "Africa CDC Partners with SACIDS on COVID -19 Preparedness and Response" retrieved at https://africacdc.org/news-item/africa-cdc-partners-with-sacids-on-covid-19-preparedness-andresponse/

Africa Progress Panel - Africa Progress Report (2015) "Power, People, Planet: Seizing Africa's Energy and Climate Opportunities.

Akrofi M.M., and Antwi S.H. (2020). "COVID-19 Energy Sector Responses In Africa: A Review Of Preliminary Government Interventions" Energy Res Soc Sci. 2020; 68:101681.doi:10.1016/j.erss.2020.101681.

Bright Green Project, (2016). Industrial symbioses and circular economy. Available at: http://www.brightgreen.fi/cases. 17.11.2016.

Brookings Institute (2020) "Learning from the Best: Evaluating Africa's COVID 19 Responses" retrieved from https://www.brookings.edu/blog/africa-in-focus/2020/07/08/learning-from-the-best-evaluating-africas-covid19-responses/

EcoMENA (2020) "Solar Energy Prospects in Tunisia" retrievable at https://www.ecomena.org/solar-tunisia/

Havenhill Synergy,(2020) "The impact of COVID-19 on the Off-Grid Energy Sector" Sun-Connect-News, 2020. https://www.sun-connect-news.org/articles/market/details/the-impact-of-covid-19-on-the-off-gridenergy-sector/

IEA, (2020) "Global Energy Review 2020 – The Impacts of the Covid-19 crisis on global energy demand and CO2 Emissions" IEA, April 2020.

IEA, (2020) "Global Energy Review 2020 – The Impacts of the Covid-19 Crisis on Global Energy Demand and CO2 Emissions" IEA, April 2020.

IRENA (2019) "Future of Solar Photovoltaic" International Renewable Energy Agency, 2019.

ITWeb (2020) "Kenya Launches KoviTrace App to Curb COVID 19" retrieved at https://itweb.africa/content/mQwkoq6PgWk73r9A

Osseni, I.A.(2020). "COVID-19 Pandemic in Sub-Saharan Africa: Preparedness, Response, and Hidden Potentials" Trop Med Health 48, 48 (2020). https://doi.org/10.1186/s41182-020-00240-9.

Copyright © 2021 Centre for Democracy, Research and Development (CEDRED), Nairobi, Kenya.
http://cedred.org/jais/index.php/issues