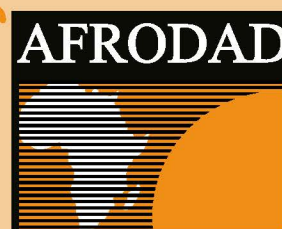


RISK AND OPPORTUNITIES OF PPP FINANCED ENERGY PROJECTS: Case of Kariba South Expansion Project



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EXECUTIVE SUMMARY

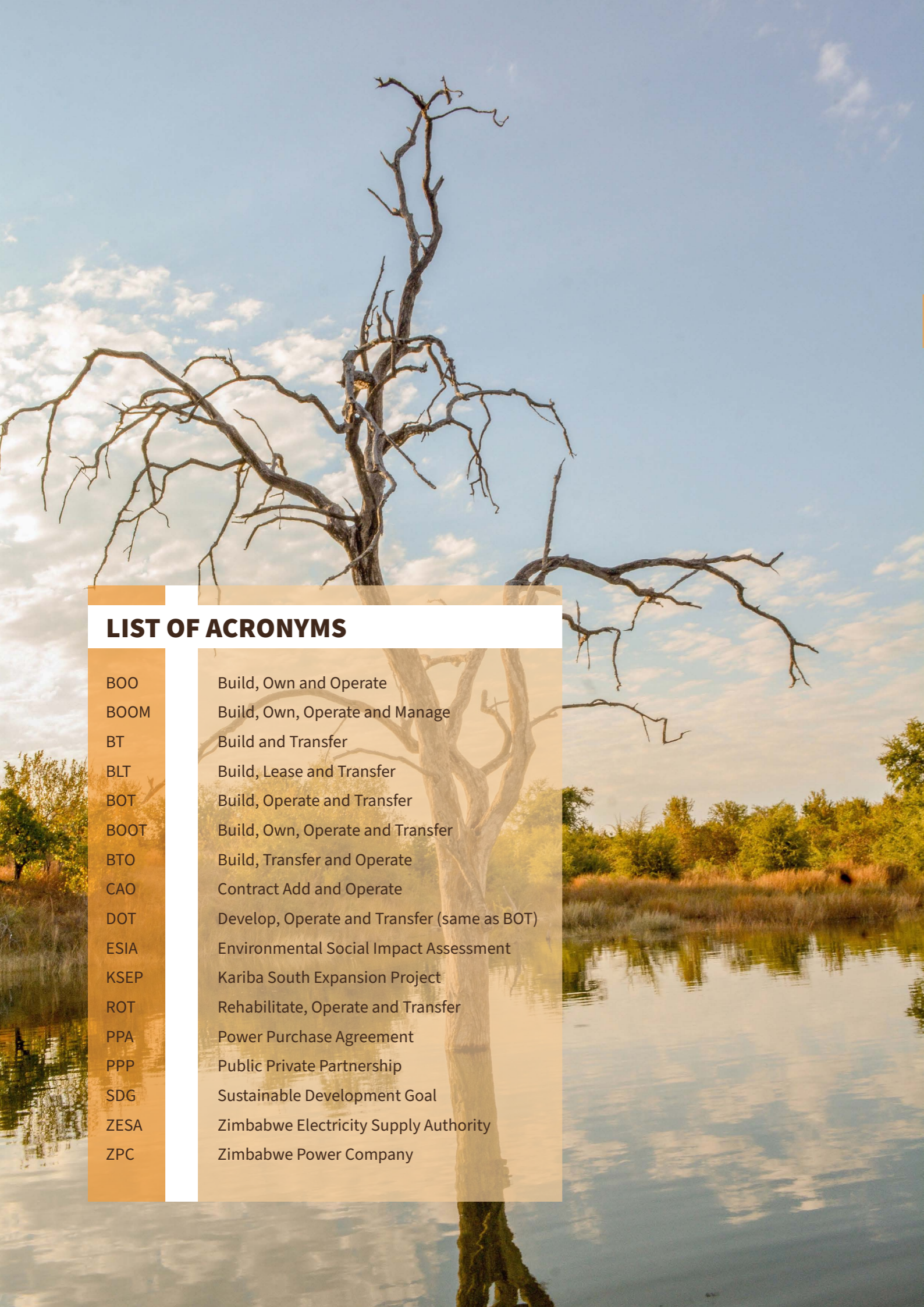
Public Private Partnerships (PPP) have been popularized as fulcra in the development of various infrastructure projects although their efficacy seems to be case specific given the variant structuring of PPPs. Accordingly, this study reflects on the risks and opportunities of PPPs financed energy projects using the Kariba South Expansion Project (KSEP) as an illustrative case. The importance of PPPs as catalysts of infrastructure development in the energy sector is elaborated in the study, as is the alignment of PPPs to the Sustainable Development Goals (SDGs) – particularly SDG 7 which is fastened on ensuring the universal access of affordable, reliable, sustainable and modern clean energy for all. In particular, Target 7.b under SDG 7 aims to increase infrastructure and the associated technology for the supply of clean, modern and sustainable energy in all developing countries. In that realm, the study unpacks the importance of PPPs by laying out the structuring and roles of different parties to a hydropower PPP, the different types of PPPs and how public entities can harness their potential and manage the probable risks. Using the KSEP, the research highlights some risks such as contingent liability arising from unforeseen potential future losses and the associated equity in case the PPP fails. Other risks include corruption, opaque arrangements that are swept under parliamentary radar coupled with the unavailability of viable legal and regulatory frameworks which guide the operation of PPPs among others. All which militate against robust democratic governance of PPPs thereby derailing intended strategies. The findings from the research note that the use of Environmental Social Impact Assessment (ESIA) speaks to the project`s ability to integrate environmental considerations in infrastructure investments. The KSEP was generally successful on account of the co-option of two Power Purchase Agreements (NamPower and ZESA) and the equity investment by ZETDC, thereby scaling the bankability of the project. However, the fact that the contractor, SinoHydro shouldered most of the engineering, procurement and construction (EPC) risks culminated in an uneven negotiation scenario. The study ends by providing consideration of other infrastructure investment alternatives that are calibrated to ensure project success whilst keeping the associated costs low. These included but not limited to:

- The consideration of concessional financing from Development Financial Institutions (DFIs) such as AfDB, Multilateral Development Banks (MDBs) and the World Bank (WB) to limit the financing costs.
- The engineering of hybrid financing structures (debt and equity mix) to allow for dominant equity financing so as to limit the need to go through demanding processes of proving viability as well as compensating all project risks as is the case with debt financing.
- The consideration of financing fully infrastructure projects where resources permit. This promotes the social model of solidarity meant to address inequality, non-discrimination and equal access, promote universal social rights and shared values in line with international rights and obligations.

However, some of these alternatives do not speak to the situation of developing countries whose financial resources are limited on account of either narrow fiscal space or limited credit lines, such as the Zimbabwean case. Therefore, Zimbabwe might need to take steps towards accessing part of the annual USD100 billion concessional climate finance as promised by the Global North under the Paris Agreement.

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1. INTRODUCTION

LIST OF ACRONYMS

BOO	Build, Own and Operate
BOOM	Build, Own, Operate and Manage
BT	Build and Transfer
BLT	Build, Lease and Transfer
BOT	Build, Operate and Transfer
BOOT	Build, Own, Operate and Transfer
BTO	Build, Transfer and Operate
CAO	Contract Add and Operate
DOT	Develop, Operate and Transfer (same as BOT)
ESIA	Environmental Social Impact Assessment
KSEP	Kariba South Expansion Project
ROT	Rehabilitate, Operate and Transfer
PPA	Power Purchase Agreement
PPP	Public Private Partnership
SDG	Sustainable Development Goal
ZESA	Zimbabwe Electricity Supply Authority
ZPC	Zimbabwe Power Company

Sustainable Development Goal (SDG) 7 is premised on ensuring the provision of affordable, reliable, sustainable and modern clean energy for all. Accordingly, Target 7.b under SDG 7 aims to increase infrastructure and the associated technology for the supply of clean, modern and sustainable energy in all developing countries. Notably, hydropower is the largest form of clean renewable electricity to date at 16% of the world's power needs at affordable prices, hence its dominance in the renewable energy mix of most countries. The development of hydropower infrastructure/plants is predominantly and traditionally government-financed but narrow fiscal space has created an avenue for a blended (public and private) funding approach in hydropower infrastructure development. The inclusion of the private sector in infrastructure development has been popularized as Public Private Partnerships (PPPs). Linh et al (2018) note that PPPs have become a new and effective way of funding infrastructure development given a number of successful cases in the world despite social, economic and environmental costs associated with hydropower PPPs.

Riding on the wave of other successful PPPs in the energy sector such as the Mtwara Power Plant (Tanzania), the Kafue Gorge Project (Zambia), Chicapa Hydroelectric Dam (Angola) and the Lokoho Hydro for Rural Development (Madagascar); the Zimbabwe Power Company (ZPC), a Public Entity (under the Zimbabwe Electricity Supply Authority (ZESA) Holdings) was involved in a PPP to expand the installed capacity of the Kariba South hydropower plant by 300MW. Prior to the Kariba South Expansion project, Zimbabwe's gap between installed power capacity and the peak power demand used to be 1 200MW and the deficiency was covered either through power imports from Eskom (SA), Cahora Bassa (Mozambique) and SNel (DRC) or the execution of load shedding. The commissioning of the PPP-funded 300MW at Kariba South in March 2018 was supposed to reduce the peak power shortage to 900MW but, the inefficiency of the aged Hwange thermal power plant and the seasonal oscillation in hydro power generation associated with low water levels in Kariba Dam imply that more sustainable power generation alternatives must be considered. Central to the Kariba South Expansion Project (KSEP) are concerns of whether energy infrastructure projects financed by PPPs deliver on the promises of their proponents. The prime rationale behind this study is to assess how varied interests between the private and public sector entities in a PPP agreement play out with respect to:

- Cost-effectiveness and risk transfer mechanisms,
- Development outcomes,
- Impacts on democratic governance,
- Integrating environmental considerations in infrastructure investments, and
- Other infrastructure investment alternatives

In setting up the tone for a robust discussion of these issues, this write up, uses secondary data and available literature on the KSEP, to analyse the structuring of PPPs, the types of PPPs, and provide stylized facts on the KSEP.



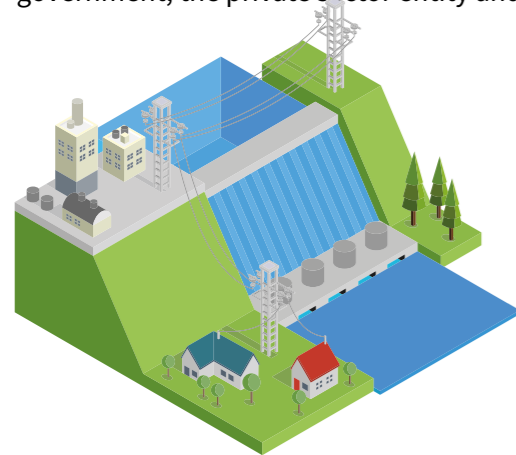
2. PUBLIC PRIVATE PARTNERSHIPS (PPPS)

PPPs are long term contracts between public sector entities (central government, state-owned enterprises, provincial, or local authorities) and the private sector players, where the private sector entity undertakes to provide a public service or asset for a significant assumption of technical and operational risk and management obligations, and returns are linked to the performance of the earnings of the project over the long term.¹ The PPP model covers the design, construction, the operation, the servicing/maintenance of public infrastructure as well as the management of such assets by the private entities (Linh et al. 2018). Procedurally, PPPs are a variant from the traditional government procurement tenders where a public entity retains control over the ownership, the designing, the financing, the operation, maintenance and management of the project. In the case of PPPs, private entities assume a key role in public projects compared to government institutions and might provide the financing too (Loxley 2013).

The growth of PPPs is closely linked to limited public resources given debt unsustainability and narrowing fiscal space for most developing countries, thereby stalling the development of key infrastructure supportive of the growth ambitions of these economies. Also, the general ideological shift in favor of the superior efficiency of private entities when compared to their public counterparts, has led to the privatization wave, supported by the need to reverse prevalent crowding out of the private sector by the public sector. Effectively, PPPs became a 'viable' alternative financing for infrastructure development.

2.1 Structuring of PPPs

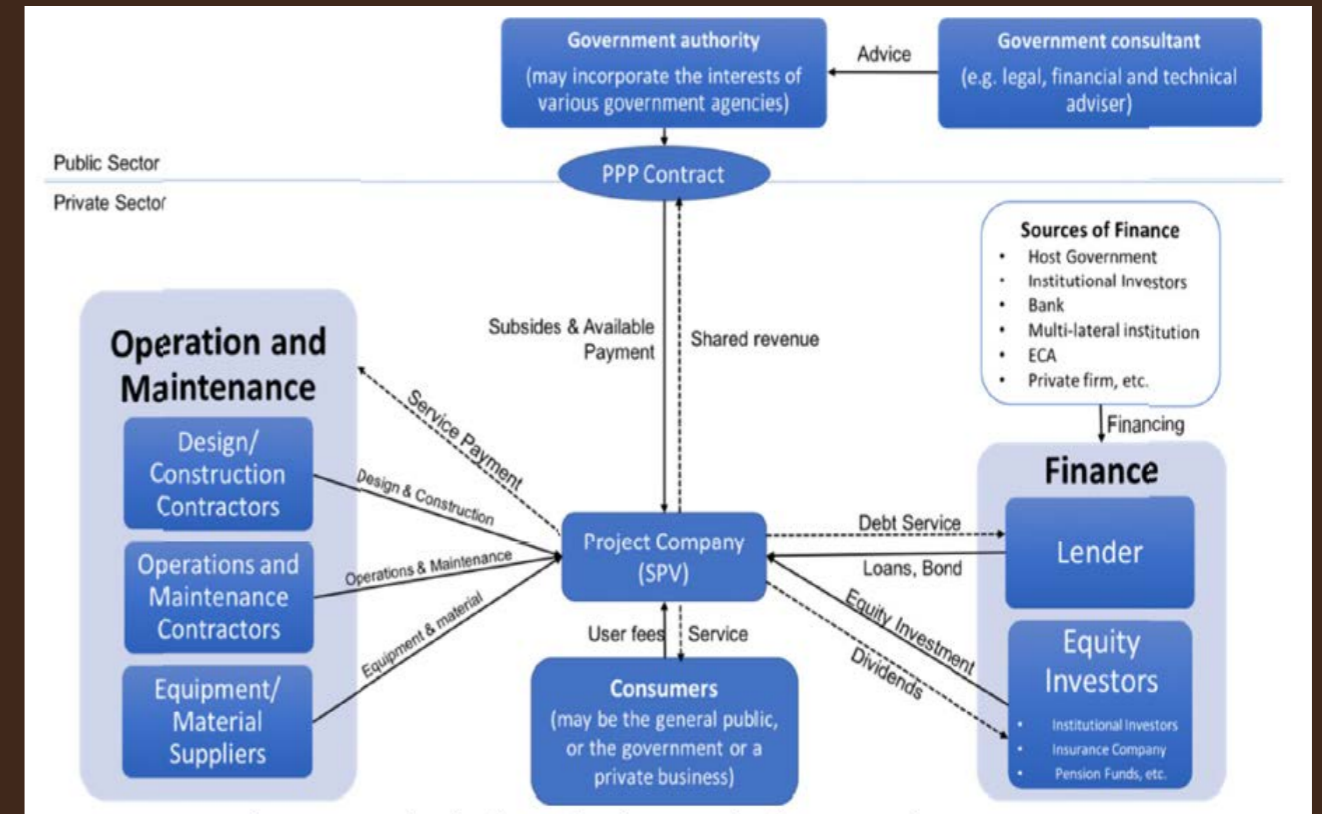
In general, PPPs are complex as they include several stakeholders (connected by contracts) with vested interest and operational obligations in a project. A vanilla PPP consists of three parties, that is, the government, the private sector entity and the financial institutions (see Figure 1).



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¹ World Bank Group "What are Public Private Partnerships?" <https://ppp.worldbank.org/public-private-partnership/overview/what-are-public-private-partnerships>

Figure 1: Stakeholders in a vanilla PPP project structure



Adopted from Linh et al. (2018)



The public entity is the initiator of a PPP agreement and acts as per advice from consultants regarding legal, financial and technical issues. The public entity also raises capital for the PPP project depending on the setup of the project, guides on investment, supervises the project and makes purchases of goods and services required in the execution of the project. The private sector entity does not directly enter a PPP setup but does so jointly with the public entity through a limited liability Special Purpose Vehicle (SPV) – a Project Company/Concession Company responsible for designing, mobilization of capital, construction and operation of the project. The SPV is responsible for expediting transactions, instituting operational rules and regulations, management oversight and raising and the signing of contracts. Financiers in the name of commercial banks and other non-bank financial institutions provide non-concessional funding whilst development finance institutions (DFIs) such as the WB, Multilateral Development Banks (MDBs), and AfDB provide concessional finance. The inclusion of different financiers is a function of the funding needs of the project and usually more financing institutions are involved for capital intensive projects and such funding consortia are effective in spreading funding risk. Since the SPV is a Limited Liability entity, it can operate with a capital structure that involves debt and equity capital. Debt is in the form of loans and bonds whilst equity is derived from the public entity or other non-bank institutional investors (pension funds, insurance companies). The SPV is also responsible for serving the clients (electricity users), thus it collects payments for power supplied to clients and makes sure that clients investors value for money. Mostly, PPPs are structured in such a way that the cashflows generated by the project are able to service the loans and bonds. At the same time, equity investors get dividends from the proceeds of the operation of the project and the earnings can be transformed into liquid assets through both securitization and financialization of the earnings and the infrastructure.

2.2 Types of PPPs

There are innumerable forms of PPPs designed to suit various construction, operation, ownership, and revenue-generating projects. These forms of PPPs are designed to suit the interests of both the public and the private sector entities for each unique infrastructure project and in most cases, the form of PPP defines the contractual obligations for both parties. Figure 1 provides a summary of the different forms of PPPs.

Figure 1: Types of PPPs

Types of PPP identified	Description of PPP
1. Traditional PPPs	In a traditional PPP agreement, the public component of the partnership acts as a contracting officer. It looks for funding and has overall control of the project and its assets. Almost any partnership between a private contractor and a government entity can be considered a PPP, but some of the most common examples are public road projects, maintenance of parks, and construction of schools and other public buildings.
2. Operation and maintenance PPPs	With an operation and maintenance PPP, the private component of the partnership operates and maintains the project, while the public agency acts as the owner of the project. Examples of these contracts include bridges and toll-ways. Ongoing maintenance may provide revenue for the private party through tolls or other fees paid through public use.
3. Design-built PPPs	A design-build PPP is similar to a client-contractor arrangement. The private partner designs and builds the facility, while the public partner provides the funds for the project. The public partner retains ownership of the project and any assets generated through its use.
4. Design-Build-Operate PPPs	Design-build-operate PPPs are similar to design-build P3s but include ongoing operation and maintenance of the property facility or project by the private party. The public partner acts as the owner of the installation and provides the funds for construction and operation. If the private partner operates the project only for a limited time before the facility is transferred to the public partner, the arrangement is known as a design-build-operate-transfer agreement.
5. Design-Build-Finance-Operate PPPs	A variation of the design-build-operate P3 includes the component of general financing supplied by the private contractor. With a design-build-finance-operate arrangement, the private party provides financing and design, then builds, possesses, and operates the facility. The public partner provides funding only while the project is being used or is active.
6. Build-Transfer-Operate PPPs	Under a build-transfer-operate PPP, the private partner builds the facility and transfers it to the public partner. The public partner then leases operation of the facility to the private party under a long-term lease agreement
7. Build-Own-Operate PPPs	Under a build-own-operate contract, the private contractor builds, possesses, and operates the facility and also has control over profits and losses generated by the facility. This is similar to a privatization process.
8. Build-Own-Operate-Transfer PPPs	In some cases, the public partner builds, possesses, and operates the project for a limited time, then the facility is transferred, free of charge and including ownership, to the public agency. This may be known as a build-own-operate, transfer P3.
9. Lease PPPs	A lease PPP involves the public owner leasing a facility to a private firm. The private company must operate and provide maintenance for the facility per specified terms, including additions or a re-modelling process.
10. Concession PPPs	With a concession PPP, the private agency operates and maintains the facility for a specific period of time. The public partner has power over the ownership, but the private partner possesses owner rights over any addition incurred while the facility is being operated under its domain.

Source: JICA and SADC-DFRC (2020)

2.3 PPPs in hydro power generation

Whereas PPPs have been widely used in developing infrastructure such as roads, rail, sea ports, airports telecommunications and water, PPPs are also popular in the generation of hydropower – a key sustainable, renewable, modern and clean energy matching the SDGs' pledge. Table 1 presents some of the PPP hydropower projects in Southern Africa.

Table 1: Examples of PPPs in Hydropower generation in Southern Africa

Country	Name of project
Botswana	Orapa Emergency Power Plant (IPP project)
Mozambique	ElectroTec (Mozambique) and Rural Maintenance and Siemens (South Africa)
Tanzania	Mtwara power plant
Zambia	Kafue Gorge
Mauritius	Central Térmica de Ressano Garcia
Madagascar	Lokoho Hydro for Rural Development
Angola	Chicapa hydroelectric dam

Source: Compiled by Author

2.4 Success factors for hydropower PPP

The UN-Energy (2011) proposed a number of success factors for PPPs as provided hereunder.

- PPP legislative framework
- Cost recovery policies
- Adequate funding for research, development, demonstration and deployment
- Maximizing community benefits from hydropower generation
- Access to capital (provision of capital by different private sector players)
- Setting effective partnerships with well-defined responsibilities for each party
- Clean energy national development goals

Based on these success factors, the next section provides the stylized facts for the case of Kariba South Expansion Project (KSEP).



3. KARIBA SOUTH EXPANSION PROJECT: STYLIZED FACTS

Zimbabwe's energy mix consists of hydro and thermal power with hydro power being generated at Kariba whilst a number of thermal stations are located in Hwange, Bulawayo, Munyati and Harare. However, these plants operate below installed capacity owing to aged technologies. Hence the need for power importation to bridge the power deficiencies (AfDB 2019). Although unpopular and repulsive to the investment and growth potential of the economy, load shedding has been instituted for a long time in Zimbabwe to ease power shortages.

To address the low available capacity and power outages, the Zimbabwe Power Company (ZPC) rolled out a number of power projects in the country such as the rehabilitation of the 920MW Hwange Power Station, an expansion of the 600MW Hwange coal power station, rehabilitation of the 700MW Kariba South Hydro Power Station and, the expansion of the Kariba South hydropower station by 300MW. Before the commissioning of the Kariba South Expansion Project, peak demand exceeded installed capacity by 1 200MW and ZPC imported power from South Africa, Mozambique, Zambia and the DRC to address the power shortages². The expansion of the Kariba South Hydropower Plant was seen as a way of easing the persistent power outages. The project commenced in September 2014, and was commissioned in March 2018.

The ZPC initiated a PPP to expand Kariba South Hydropower Plant by 300MW – increasing the installed capacity to 1050MW at a cost of US\$533 million. The China Exim Bank provided a 20-year non-concessional loan amounting to US\$320 million for the project with the remainder being funded by loans from commercial banks. As part of the financing structure, ZPC sought a US\$120 million loan from Stanbic Bank South Africa (Lead Bank) and The Eastern and Southern African Trade and Development Bank (PTA Bank) as a co-funder for the expansion of Kariba South hydropower station and rehabilitation of the Hwange Thermal Station. Part of the US\$120 million went to the rehabilitation of the Hwange Thermal Power Station and is supported by a power purchase agreement (PPA) between ZPC and the Namibia Power Corporation (NamPower) for 80MW of the Kariba South capacity for 15 years. The NamPower PPA is subordinate to the Zimbabwe Electricity Distribution and Transmission Company (ZEDTC) US\$81 million PPA – further proving the bankability of the project. The ZEDTC is an offtaker in the setup of the PPP as it has ready Zimbabwean market for electricity on account of persistent

² Norton Rose Fulbright advises on the expansion and rehabilitation of essential energy projects in Zimbabwe. Available at: <https://www.nortonrosefulbright.com/en/news/64f1ce50/norton-rose-fulbright-advises-on-the-expansion-and-rehabilitation-of-essential-energy-projects-in-zimbabwe>

outages. Zimbabwe is involved in the Southern Africa Power Pool (SAPP) meant to smoothen cross-border power transmission capacity as a way of improving power supply. The PPA is a long-term agreement pre-arranging the sale of a stipulated amount of power to a client as a way of ensuring financial certainty of the project (see Fact Box 1). The new hydropower plant is wholly owned and operated by ZPC's sister company, Kariba Hydro Power Company (Pvt) Limited (KHPC).³

Whereas the total project cost is valued at US\$533 million, the contribution for engineering, procurement and construction (EPC) was valued at US\$354 million, a deal scoped by Sino Hydro, a state-owned Chinese Company. The Stanbic loan was for development costs for the expansion of Kariba South. Development costs include funding a trust account for servicing the loan from state-owned China Eximbank, funding the cost of EPC, technical consultancy fees, ZPC's contribution to the project (equity) and regulator's license fees. The EPC varies with the execution of project management and the exact EPC amount at the end of the project might be variant from the initial estimate. Global consultancy KPMG's initial project costing was US\$700million but the accurate determination of the EPC brought down the total cost to US\$533 million.⁴

The development costs for the Kariba South Expansion Project included US\$5 million inflation adjustment, US\$48 million for improving the existing Kariba South plant infrastructure, US\$28 million for the escrow account, and US\$15 million for advisors (legal, financial and technical). Further costs include US\$53 million loan interests during construction, US\$4.4 million for the Parks and Wildlife Management Authority, US\$1.2 million licensing fees by the Zimbabwe Energy Regulatory Authority and US\$15m ZPC costs.⁵ Whereas official sources points to a project cost of US\$533 million, other sources place the cost at US\$508 million (IDBZ 2019). From another dimension, revelations by the former Finance Minister (Mr. Biti) allege that the KSEP deal was initially sealed at US\$ 355 million during the Government of National Unity (GNU) and the project's cost was inflated to US\$533 million.⁶ The project thus is shrouded in controversy that impacted its initiation, structuring and costing.

The IDBZ (2019) notes that the project was largely successful as the structuring managed to address most of the risk factors as summarized hereunder.

- The project operated with a two-year warranty from the commissioning date,
- The tender process looked for an EPC contractor who could raise the financing,
- The EPC funding comprised of a hybrid finance structure (debt and equity) thereby reducing risk,
- The SPV (KHPC) owned the land on which the project was to be implemented and resettlement was affected where settlements were along the power lines,
- Authority to use the Kariba waters was received from the Zambezi River Authority,
- The use of modern power generation technology ensured cost-efficiency electricity,
- The tenure of PPAs were aligned to that of loans to reduce possibility of loan defaults,
- The risk associated with the primary offtake, ZETDC was cushioned by the credible NamPower PPA which provided foreign currency,
- The SPV (KHPC) is the one responsible for settling all project obligations as it has direct control over all electricity sales revenue,
- ZPC contributed 10% skin in the game (equity) thereby making the investment appealing, and
- The government provided guarantees for the loans, a stance that unlocked investor confidence.

Having profiled the KSEP, the discussion turns to key questions relating to PPP-financed hydropower generation projects

³ DBSA takes \$150million ZPC NamPower deal to the board. Available at: <https://newsday.co.zw/2015/11/dbsa-takes-150m-zpc-nampower-deal-to-the-board/>

⁴ Zesa seals deal with NamPower. Available at: <https://www.herald.co.zw/zesa-seals-deal-with-nampower/amp/>

⁵ Zesa seals deal with NamPower. Available at: <https://www.herald.co.zw/zesa-seals-deal-with-nampower/amp/>

⁶ Kariba power expansion project cost inflated: Biti. Available at: <https://www.zimbabwesituation.com/news/zimsit-m-kariba-power-expansion-project-cost-inflated-bit/>



NamPower PPA with the loan tenure thereby reducing mismatches in financial obligations and earnings. Notable is the use of efficient technology in power generation translating into cheap and sustainable energy. To ensure quality of the new power plant, the KSEP was on a two-year warranty, a sign of lessened service costs on the part of the SPV (KHPC). These projects attributes contributed in lessening the financing costs of the project.

However, the currency exposure from ZETDC PPA local power sales denominated in ZWL against loan-servicing costs denominated in the USD translates into a cost for KHPC that has to be managed continuously over the debt/loan servicing tenure. Whilst the NamPower PPA provides foreign currency, such amounts might not be adequate to cover KHPC's open foreign currency position, calling for foreign currency exposure management strategies. These strategies might be expensive as the local financial market is deficient of such services. Further engagement with the government might be required to secure USD allocations from the auction market to service the loans. The ZETDC PPA as much as it guarantees demand for generated power, it introduces a long-term exposure that might affect the ability of KHPC to meet debt servicing timelines, thereby tainting the credit worthiness of the SPV.

II. Development outcomes

The KSEP presents a case of both success and challenges with respect to development expressed hereunder:

- The PPP project enabled a fiscally constrained government to upgrade its energy infrastructure.
- Despite the fact that the expanded capacity still does not fully match the peak power demand in the country, the KSEP generates clean and modern energy congruent to the expectations of SDG 7. The generation of hydropower reduces the use of fossil fuels and mitigates the emission of greenhouse gases contributing to the mitigation of climate change. The KSEP ticks a number of boxes under SDG 7 such as increasing the share of renewable energy in the global energy mix (target 7.2), enhancing international cooperation to facilitate access to clean energy and promote investment in energy infrastructure and clean energy technology (target 7.a) and target 7.b premised on upgrading technology in the supply of modern and sustainable energy services for all developing countries.
- Despite these positives, the project seems to have gone against SDG 7 target 7.1 on ensuring universal access to affordable, reliable and modern energy services as the cost of power is beyond the reach of many Zimbabweans. Power tariffs have been revised innumerable, outpricing many Zimbabweans through a pricing system meant to ration power to households. This opposes the universal access to affordable, reliable and modern power services. It is notable that the KSEP did not extinguish the power shortages, though it is a step in the right direction.
- The KSEP scaled the number of electrified households thereby empowering women through alleviating time poverty, limiting exposure to toxic indoor pollutants, the scaling of employment opportunities, refining maternal health and the safety of women as well as the changing of social norms.
- The KSEP supports the growth prospects of the country by powering industries, agro-processing, powering the mining sector and amplifying employment creation.
- The generation of hydropower is environmentally friendly as it reverses deforestation and advances the fight against climate change.
- The provision of electricity enables the uptake of technology across the different facets of the

economy as electricity is critical in powering machines, gadgets and computers thereby infusing innovation. For instance, climate-smart agriculture requires the use of electricity in monitoring the water needs of plants and also the plant-based irrigation practice.

- The structuring of the KSEP has the China Exim Bank as a chief financier, and Sino Hydro as the prime contractor – thereby side lining local contractors in the project. With such Chinese control over the project, developmental issues arguably could not be pursued religiously as the foreign firms receive prime state consideration.

III. Impacts on democratic governance

The IDBZ (2019) notes that Zimbabwe does not have a substantive PPP legislative framework and does not have a PPP Government Unit, as PPP projects are implemented through the Ministry of Finance and relevant line ministries and state enterprises as is appropriate. Tax and customs incentives relating to PPPs were implemented by the Zimbabwe Investment Authority outside the legislative framework – making the provisions ultra-vires. The PPPs in Zimbabwe are guided by the Joint Venture Act of 2016 and the act directs different types of PPPs such as BT, BLT, BOT, BOO, BOOT, BTO, CAO, DOT, ROT, BOOM contract, Lease Management contract, Management contract, service contract, contract for services and SOT. Other outdated but seemingly relevant legislations include the Public Private Partnership in Zimbabwe Policy (2004), the Public Partnership Guidelines (2004) and the PPP Bill from 2013 which has not been finalized. This places the governance of PPP projects at the discretion of the concerned public entity hence there is no set standard to referee the uprightness of the governance of the KSEP.

In addition, there is a strong correlation between PPPs and governance, although the impact and structural agreement of the PPP determines whether the correlation is positive or negative. The dimension of good governance in PPP has taken center stage across the globe due to the growing interest in promoting infrastructural development that proliferates national growth. Many African countries have embraced PPP as development catalysts that bridge infrastructural backlogs and this underscores the need for good governance, as it is indispensable in ensuring value for money, transparency, accountability and avoiding policy errors and associated fiscal costs.

A baseline survey of the administration of PPPs in Zimbabwe using the Kariba South Expansion Project (KSEP) as a case point reveals that, PPP infrastructure have not given adequate attention to the principle of governance as the project was not debated and or tabled in the parliament.⁷ The parliament serves as an integral governance institution with an ombudsman role that seeks to hold the executive to account by fostering transparency, responsibility, ensuring optimum utilization of public resources through value for money debates and airing out the views of the citizens. Thus, the failure by the government to have the KSEP pass through parliamentary scrutiny was a direct violation of the constitution, as well as the fiduciary responsibility of the state that is anchored on the proliferation of horizontal accountability.



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To this end, the failure of the government to avail granular project details to the public through the parliament makes it difficult for the citizens to make comprehensive ex-post evaluation as they do not have the primary data (agreement) to make a successful evaluation. It is critical to note that Zimbabwe has been accused of being engaged in opaque mega-deals⁸ that are swept under parliamentary radar as they are embedded with rent-seeking, cronyism and questionable tendering processes. This takes away, the whole concept of effective project management as issues related to feasibility study, project selection criteria, project implementation and project financing are not open for parliamentary debate. This is aggravated by the fact that the project did not pass through the surveillance of the State Procurement Board (SPB) now known as the Procurement Regulatory Authority of Zimbabwe (PRAZ) a clear indication of disregard of statutory provisions governing projects of such magnitude.

An orthographic projection of the KSEP under the prism of the G20 Principle for Quality Infrastructure Investment⁹ such as: openness, transparency, economic efficiency in view of life-cycle cost, debt sustainability to mention but a few, shows that the entire project is wanting. Although Zimbabwe is not a member of the G20, the above-mentioned principles still speak to the principles of good governance as enshrined in the Zimbabwean constitution, Public Entities Corporate Governance Act (Chapter 10:31) and the Zimbabwe National Code of Corporate Governance (ZIMCODE). The alleged project cost inflation smears governance weaknesses in the PPP contract setup.

The non-transparent and debate surrounding the cost of the KSEP is another governance miscarriage the impact of which cannot be underestimated as it speaks to possible fraud, corruption, patronage, weak transparency and accountability mechanisms. The state's mouthpiece, the Herald¹⁰ and Zimbabwe Power Company (ZPC)¹¹ noted that the total cost of the project was US\$ 533 million. In contrast, the Infrastructure Development Bank of Zimbabwe (IDBZ) notes that the total cost of the project was US\$ 508 million – giving a variance of US\$ 25 million.¹² The US\$533 million is even distant to the US\$355 project cost

8 ZIMCODD 2021

9 Quality Infrastructure (mofa.go.jp)

10 UPDATED: ED commissions \$533m Kariba project | The Herald

11 Kariba expansion project begins - Zimbabwe Power Company (zpc.co.zw)

12 Infrastructure Development Bank of Zimbabwe. (2019). Analysis of factors that affects the bankability of Infrastructure in Zimbabwe with special reference to Energy



as alleged by the ex- Finance Minister Biti. Transparency International Zimbabwe (2021) noted that, poor accountability and transparency mechanisms coupled with weak ombudsman institutions have opened havens for financial leakages in national projects. The project cost variation shows possible economies of affection and tender-preneurship, a common cancer in public sector management in Zimbabwe.¹³ Relatedly, Zimbabwe's corruption rankings continue to worsen as the country was ranked 157 on the 2020 corruption index¹⁴ which attests to its weak governance system. Another governance anomaly to note is the fact that, Zimbabwe Energy Regulatory Authority (ZERA), which is the regulatory authority for energy received US\$ 1.2 million as licensing fees for the KSEP, an unjustified additional cost to the project as ZERA get a national budget vote yearly. It would have been expedient for the nation if such fees are either eliminated or reduced, and be considered after the project's completion.

Above all, the KSEP has political connotations on the relationship between Zimbabwe and the Republic of China thereby defining the vested interest of the executive in the Chinese-funded PPP. China has funded a number of projects in Zimbabwe such as the expansion of the R. Mugabe International Airport, construction of the new parliament building as well as the construction of a number of dams across the country. Most such projects are marred in controversy as procurement irregularities deform the public's trust in China-funded projects. One case in point is the tendering process of the Kunzvi Dam Project where a cost-inefficient bid was offered to a Chinese company and no action was taken to redress the anomaly.

IV. Integrating environmental considerations in infrastructure investments

Whilst the KSEP provided resources for environmental considerations, there is no evidence of how the resources were deployed except noting that Environmental Social Impact Assessment (ESIA) was conducted by the Environmental Management Agent (EMA). ESIA refers to a mechanism that is used for the examination of the impact and effects that the infrastructure project has

13 Chilunjika, A. and Mutizwa, B. 2019. "Exploring factors militating against the performance of parastatals in Zimbabwe: the case of the national railways of Zimbabwe from 2008 to 2016". Journal of Public Administration and Development Alternatives (JPADA), 4(2):41-60.

14 Zimbabwe Corruption Rank | 2021 Data | 2022 Forecast | 1998-2020 Historical | Chart (tradingeconomics.com)

on the community and the environment. ESIA is effective if undertaken prior the execution of the project so as to enhance decision-making and bankability. Thus, ESIA is vital in safeguarding the environment and by preventing execution methods that are damaging to the environment. To this end, after a successful environmental scanning by EMA, it was noted that the communities surrounding the power plant were going to be affected by the construction of transmission lines. A resettlement plan was executed as well as protecting the wildlife as the project approached into the jurisdiction of the Parks and Wildlife Management Authority. This led to the payment of US\$ 4.4 million by KHPC to the Parks and Wildlife Management Authority as compensation.

In addition, the construction of a hydropower plant is in alignment with the call for smart energy in the international community. The recent 26th UN Climate Change Conference of the Parties (COP26) hosted by the United Kingdom from the 31st October -12th of November 2021 is a clear testimony. The KSEP brings in a plethora of climate friendly advantages such as:

- Renewable energy – hydropower is renewable and will never run out unless climate change affects water levels.
- Reliable power – the Zambezi catchment area is expansive thus power generation is ascertained.
- Efficiency – the technology used in the KSEP is cost efficient and can be adjusted to suit the flow of water as water levels change.
- Emission Free – the generation of hydroelectricity does not release emissions into the atmosphere that are responsible for climate change

Furthermore, the climate advantages of the project go beyond power generation. This is because, the construction of the 300 MW generation helped mitigate against deforestation, as it reduced

electricity blackouts thereby reducing the number of those who cut down trees for firewood. The reduction in the use of fossil fuel for energy is of paramount importance in the promotion of clean energy. Thus, the KSEP is one of the milestones towards sustainable power generation and clean energy. However, although the KSEP added 300 MW to the national grid, electricity blackouts still persist. This points to insufficient hydropower being generated, thus more expansive hydro generation projects ought to be considered. Currently, Zimbabwe is in talks with Mozambique and South Africa in order to import electricity.

A closer scrutiny of Zimbabwe`s energy investments show that, the country`s energy policy is still in dependent on coal energy. In July 2020, the President Emmerson Mnangagwa visited 8 companies that had just acquired coking coal plant and coal mines in Hwange. During the tour a local firm, Western Areas announced plans to establish a 300 MW coal plant and Zimbabwe Gas and Coal Company also announced plans to construct 750MW plant. This brings into question the government`s commitment to renewable energy. However, the cancellation of the US\$ 1.5 billion funding for Hwange Coal Power Plant expansion by the Chinese is a welcome development in respect to climate change. Among other disadvantages, coal leads to the emission of harmful gasses that affect the ozone layer. Whilst coal mining, same as hydropower projects destruct habitat and scenery, displaces local people and threaten animals, the water harnessed in the case of hydropower plants can be used for various life-supporting activities compared to threats of coal mining activities in Hwange National Park. It also leads to desertification and environmental degradation.

To this end, the government must invest in clean and renewable energy such as solar, wind, and hydro power. Zimbabwe`s region 5 is exposed to sunlight throughout the year and this can be harnessed to the benefit of the country.



V. Other infrastructure investment alternatives

With respect to hydropower generation through PPPs, the bankability of the project is at the core of the development plan as private players ought to recoup their investment at the cost of foregone public service delivery and other developmental interventions. Typically, the private sector makes more out of a PPP and undoing such limitations requires agile processes by the public entity of proving viability to the satisfaction of private players and eliminating all probable risks on the part of the public entity. To quell these challenges, the following options might be considered in funding hydropower generation:

- Public entities might consider cheaper financing from DFIs such as AfDB, MDBs and the WB as the interest on such loans are mostly concessional. However, in the case of Zimbabwe, unlocking such funding requires the government to extinguish its loans first.
- The use of hybrid financing structures (debt and equity mix) might require engineering towards dominant equity financing and less of debt financing so as to limit the exposure of compensating for all project risks as is the case with debt financing.
- Given the trend of reverting back to public ownership especially in developed economies, the public sector entities might consider fully financing their projects where resources permit. This promotes the social model of solidarity meant to address inequality, non-discrimination and equal access, promoting universal social rights and shared values.

5. CONCLUSION

PPPs are popular in the development of various infrastructure projects as they allow private sector financing to bridge the infrastructure financing gaps prevalent in most developing economies owing to either narrow fiscal space or unsustainable debt which limits further contraction of debt. To cater for the different financing needs of variant infrastructure project, different forms of PPPs have been designed accordingly. In determining whether PPPs in the energy sector perform as per their proponents, the case for the KSEP was considered. Although the project is considered a success, innumerable provisions were made to reduce default risk on the non-concessional loans. The inclusion of PPAs from ZETDC and Nampower, government guarantees and the provision of equity capital by ZPC unlocked investor confidence.

The high stakes on the contractor meant that ZPC had lesser negotiating space and such rigidity affected fairness in risk sharing. The project's SPV, KHPC faces currency risk associated with the 2019 currency reforms that made the ZWL the only acceptable legal tender. Electricity sale in ZWL will require to be converted to the USD for the servicing of the project's loans amidst unstable exchange rates. Also, poor governance structures and the unavailability of unambiguous legislative and regulatory frameworks that speaks to PPPs complicate the administration of PPPs. Horizontal accountability, is further undermined by the exclusion of parliament in the project life cycle. The project was however, considerate of the environment as such robust ESIA was carried out. Although the project is in alignment with the current global trend of smart energy, the electricity output of the KSEP is still inadequate to bridge the national power generation gap.





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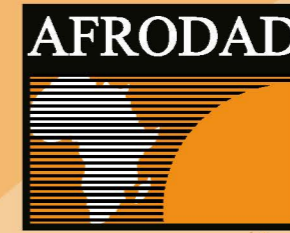
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