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AN ASSESSMENT OF EMERGING HYBRID PUBLIC-PRIVATE PARTNERSHIPS IN THE ENERGY SECTOR IN SOUTH AFRICA

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– Abstract –

The power sector is one of the greatest beneficiaries of private investment through public-private partnerships (PPPs) and project financing structures globally. South Africa has adopted a unique approach to renewable energy (RE) project finance and partnership development. This unique approach is referred to as the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). The programme is implemented through Independent Power Producer (IPP) projects. The aim of this article is to assess IPPs as a variant model of PPPs. To this end, the first objective is to determine what type of partnership IPPs constitute. The second objective is to gain an understanding of how a variant PPP model can be structured. This research is based on a qualitative research design. Data from past research studies, comprising 66 interviews and 168 interviews respectively, were triangulated with current research, including 13 interviews and a conceptual and documentary analysis. The findings of the research suggest that IPPs contribute to diversifying the country's energy mix; developing RE technology; infrastructure, local economic, and green skills development; and stimulating socio-economic development. This research is unique as the concept of hybridity or hybrid PPPs is an unexplored area in public sector management. Hybrid PPPs represent a unique approach to public-private procurement for energy partnerships. The hybrid PPP model serves public interest and is crucial to the country's energy transition.

Keywords: *Hybridity, Independent Power Producer, Public-Private Partnerships, Renewable Energy Procurement*
JEL Classification: H89

1. INTRODUCTION

Eberhard and Kåberger (2016) argue that important lessons can be learned from the REIPPPP for emerging markets that are planning investments in renewables and other critical infrastructure development and investment. South Africa had limited deployment of RE prior to 2011, beyond the Department of Energy's (DoE) national solar water heater rollout programme. Eskom has maintained ownership of 95% of South Africa's electricity generation, with limited progress made towards introducing IPPs into the electricity supply market or developing RE facilities (Boulle, Boyd & Cunliffe, 2015). According to Nel and Komendantova (2015), the South African government recognises the need for private capital for RE and envisages that it will come from the REIPPPP. The government developed the REIPPPP in order to leverage private capital through IPPs, to stimulate the RE industry in South Africa without burdening the public budget. The goal of this article is to assess IPPs as a hybrid PPP. To this end, the article is structured as follows: firstly, a discussion of the research methodology is provided. Secondly, PPPs are conceptualised, including a brief description of PPPs in South Africa. Thirdly, the concept of hybrid PPPs is discussed. This is followed by a discussion of IPP partnerships in South Africa. Thereafter the purpose of the REIPPPP is outlined, followed by a brief overview of procurement, contractual arrangements, project financing, and agreements and negotiations. Lastly, IPPs are compared to classic PPPs, and a conclusion is provided.

In order to gain a sense of the meaning of a PPP and the concepts of hybridity and hybrid PPPs, a conceptual analysis was required. Firstly, a keyword search was conducted on three journal databases, namely Scopus, Ebscohost, and Emerald, using the keywords 'public-private partnerships', 'hybridity', and 'hybrid public-private partnerships'. A thematic and conceptual analysis was undertaken to establish a pattern of relevant themes and categorising these concepts in terms of relevance, and discarding irrelevant concepts. Secondly, a documentary analysis was undertaken to reach saturation of knowledge regarding PPPs and IPPs in South Africa. The documentary analysis included official and unofficial and solicited and unsolicited government publications.

2. CONCEPTUALISING PUBLIC-PRIVATE PARTNERSHIPS (PPPs)

Most definitions of PPPs include the private sector playing a role in the provision of services originally played by public sector entities (Kumaraswamy, Zou and Zhang, 2015). The rationale behind choosing a PPP is that value for money will be

derived; in other words, the project must be efficient, effective, economical, and delivered on time as defined in an agreed upon contract (Rakić & Rađenović, 2011). A PPP involves the combination of roles, relationships and resources by two or more public and private entities to achieve their separate objectives through joint pursuit of a common objective, such as delivering infrastructure or public services (Vigoda-Gadot, 2003).

2.1. PPPs in South Africa

A PPP is defined in South African law as "a contract between a government institution and private party, where: i) the private party performs an institutional function and/or uses state property in terms of output specifications; ii) substantial project risk (financial, technical, operational) is transferred to the private party; and iii) the private party benefits through unitary payments from government budgets and/or user fees" (National Treasury PPP Unit, 2007). The PPP rationale in South Africa is based on three principles, namely value for money, affordability, and appropriate risk transfer to the party (public or private) that is most suited to carry certain risks. The National Treasury PPP Unit (2004) furthermore emphasises that PPPs in South Africa are "projects regulated by the provisions of Regulation 16 of the Treasury Regulations". The National Treasury PPP Unit developed Standardised PPP Provisions to guide the planning, development, and implementation of PPP projects in South Africa. The Standardised PPP Provisions, however, apply "only to those types of PPPs which are subject to Treasury Regulation 16. The PPP definition in Treasury Regulation 16 distinguishes between two basic kinds of PPP, one involving the performance by a Private Party of an 'institutional function' and the other involving some form of 'use of state property' by a Private Party for its own commercial purposes" (National Treasury PPP Unit, 2004:8).

3. CONCEPTUALISING HYBRID PPPs

A literature search on conceptualisation of terms such as 'hybridity', 'hybrid projects', and 'hybrid PPPs' yielded mixed results. Diverse views exist in the literature on what a hybrid PPP constitutes. Depending on the philosophical worldview, in most cases hybrid PPPs would be classified as a hybrid organisational or hybrid governance form, and a collaboration between the public and private sector. Studies on new organisational forms in public administration have not provided much information about hybridity, hybrid partnerships, and hybrid organisations (Gulbrandsen, Thune, Borlaug & Hanson, 2015:363). The

'hybridity/hybrid' phenomenon is an offspring of New Public Management (NPM), which is guided by the application of market-based methods to enhance public service delivery (Baker, 2016).

Hybridity is when a phenomenon shares an identity with another but does not become like the other, thus illustrating phenomena that are highly differentiated but structurally linked (Pederson, 2016). The term 'hybridity' suggests network governance of the intersection between a variety of organisational arrangements between several different organisations, sectors, and even societal spheres (Gulbrandsen et al. 2015; Muir & Mullins, 2014).

Hybrid organisations from a public administration perspective can be described as the combination of concepts, resources, people, and practices of different origins to create innovative entities to achieve a joint goal (Gulbrandsen et al. 2015). In terms of organisational reform, emerging organisational structures do not bear resemblance to traditional organisational structures. This is evident in the network society, where matrix organisational structures have become more appropriate to solve complex and dynamic problems. In this case, hybrid organisations often resemble matrix organisation types, which are non-linear in nature, and are rather traditional, bureaucratic, hierarchical structures. Andersen (2004) refers to this phenomenon as a "process of devolution that has taken place, resulting in hybrids that are neither purely public nor purely private". Matrix organisations, inter-agency coordination, and complex networks are relatively common and are likely to increase in use for public service provision (Kurunmäki & Miller, 2010).

Baker (2016:433) views the concept of hybridity from a transaction cost theory perspective by stating that "a PPP is a hybrid structure that lies between the traditional provision of public goods and services by the government and pure privatisation". Hybrid forms of governance are often characterised by an agreement between public and private sectors. Buso, Marty and Tra (2014) view hybrids from a public financial management perspective and argue that because resources available for public interest pursuits have become increasingly rationed, hybrid organisational forms such as PPPs have become progressively important to bridge resource constraints.

Ménard (2012) analyses hybrid organisations from a New Institutional Economics perspective, arguing that these special contractual practices seek to introduce market-type relationships in a context in which non-market forces play a role. This is particularly true for infrastructure and services that are crucial to supporting

economic development and growth; one such example is electricity provision (Ménard, 2012). Hybridity plays a very important role in the modernisation of public services, where distinct resources, values, and practices of the public and private sector are combined to solve complex societal problems (Bishop & Waring, 2016). Heldeweg, Sanders and Harmsen (2015) concur with the above conceptualisation and explain that some forms of mere private collaboration in reality also lean upon some disguised form of active public interest input as guided by government. Hybridity is the combination of different structural forms of working together, such as enterprises, government ministries, and state-owned enterprises (SOEs) (Christensen & Laegreid, 2011). Hybrids are usually developed 'fit-for-purpose' and there is no 'one-size-fits-all' structure because hybrids are very diverse in its goals, mandate, and structure (Vining & Weimer, 2016).

Similarly, Mert (2014) labels the hybrid phenomenon "Hybrid Governance Mechanisms (HGMs)". HGMs involve a network governance approach to global environmental issues, including selective deregulation, voluntary schemes of non- or self-regulation, and market-based solutions (Mert, 2014). In this conceptualisation of hybridity, Mert (2014) emphasises environmental sustainability.

Based on the literature analysis, it seems that the term 'hybrid' is a nominal concept and is therefore difficult to operationalise. The concept must be clarified in terms of the context and dimensions – the type of partnership, the goal of the partnership, ownership, etc. There is diversity in the definitions of the hybrid phenomenon. Authors refer to either hybrids, hybridity, hybrid governance, hybrid organisations, hybrid PPPs, hybridisation, or hybrid partnerships. For the purpose of this article, the term 'hybrid PPP' is sufficient, as it includes all of the above characteristics of the hybrid phenomenon; the standard definition of a hybrid PPP relevant to this article is therefore based on Christensen and Laegreid's (2011) definition, which is the combination of private sector, government, and SOEs working together.

4. INDEPENDENT POWER PRODUCER (IPP) PARTNERSHIPS

Debates have intensified on the most effective policy instruments to accelerate and sustain investment by the private sector into electricity-generating technologies, and grid-connected REIPPPs have become more prevalent around the globe (Eberhard, Kolker & Leigland, 2014). Feed-in tariffs (FITs) have been the most widely used government support mechanism for accelerating private investment in RE generation. FITs are meant to reflect the costs of producing particular kinds of

energy, as predetermined by government analysis. Competitive tenders have also emerged in many jurisdictions as an acceptable policy instrument, especially in emerging economies. Competitive bid tenders have the potential to offer lower prices, while still providing adequate incentives for market entry by RE suppliers. In 2009, South Africa began exploring FITs for RE but they were rejected in 2011 in favour of following a competitive tender process. This resulted in a policy programme now known as the REIPPPP (Eberhard et al., 2014). The IPP Unit, a DoE-led task force supported by the National Treasury PPP Unit, took responsibility for designing and implementing a procurement process for the REIPPPP (Nel & Komendantova, 2015).

4.1 IPPs as a variant PPP model

Under the REIPPPP, a unique type of public-private arrangement, called IPPs, is responsible for 85% of foreign direct investment (FDI) (Creamer, 2016). In an IPP, the private sector enterprise, a state-owned electricity utility, and the DoE (Ministry of Energy) collaborate to achieve a specific goal (to deliver sustainable alternative energy to the grid). The DoE (2009:5) defines an IPP as "any person in which the government or any organ of state does not hold a controlling ownership interest (whether direct or indirect), which undertakes or intends to undertake the development of new generation capacity pursuant to a determination made by the Minister in terms of Section 34(1) of the Act".

Heldeweg et al. (2015) consider hybrid PPPs from a legal normative point of view, comparing private-private and public-private energy partnerships. They concluded that regardless of the type of collaboration, whether a private model or a public-private model is followed, good governance in energy transition is a "hybrid energy challenge, and these partnerships should be labelled 'hybrid energy governance partnerships'". Heldeweg et al. (2015:2) found that "these forms of mere private collaboration *de facto* also lean upon some disguised form of active public interest input as guided by government". The public interest in this case is electricity generation and distribution. Electricity is a public good, with specific impact on the economy, environment, and quality of life. The energy sector is therefore heavily regulated. The energy sector has been one of the greatest recipients of private investment (Delmon, 2009). Thus, RE projects serve not only private sector interest but also public interest, and they are seen as crucial to a country's energy transition. They can therefore indeed be viewed as hybrid PPPs, even in cases where minimal government involvement takes place. This is because the partnership is viewed as

an institutionalised form of policy interaction and the project outcomes focus on policy realisation, and there is an institutional agreement between government and private actors (Heldeweg et al., 2015).

IPPs in South Africa bear similarity to the above scenario. Firstly, the goal of the REIPPPP is to achieve public interest, to facilitate the achievement of various policy goals set out in the National Development Plan (NDP) of South Africa, to increase energy infrastructure development, and to implement a more diversified mix of energy and wider energy access (ESI Africa, 2016). In line with the NDP, the REIPPPP is guided by the provisions of the Electricity Regulation Act (No. 4 of 2006), which authorises the Minister of Energy to determine the scope of new energy. The country's Integrated Resource Plan (IRP) makes provision for the generation of 17.8 gigawatt (GW) of RE by 2030, to be commissioned under the REIPPPP (DoE, 2015).

Secondly, the private sector plays a large role in actively achieving policy goals. A private model is followed in developing IPPs, where the private sector funds and owns 100% of the infrastructure and carries project risks, and the state plays an active role in regulating the generation and distribution of RE. Ruiters and Matji (2016) refer to this scenario as a private sector PPP model. Lastly, because there is a contractual arrangement between the IPP, government, and Eskom, it can be argued that there is a legally structured partnership between the actors involved in the IPP. Based on Heldeweg et al.'s (2015) classification of a hybrid PPP, IPPs can be viewed as hybrid PPPs. Heldeweg et al. (2015:2) argue that "in the energy governance discourse, this issue is important because in the organisation of PPP, the public interest of energy transition comes with specific normative safeguards, originating in public law".

IPPs also bear resemblance to the HGMs as defined by Mert (2014), where a market-based approach is used and where non-state actors play a role in solving complex environmental problems. In this case, the complex environmental problem is diversifying South Africa's energy mix and introducing more sustainable RE to the grid. However, although a market-based approach is used, an element of government regulation in the implementation of the REIPPPP remains. The government determines the generation capacity of each IPP, and the National Energy Regulator of South Africa (NERSA) is a regulatory authority established as a juristic person in terms of Section 3 of the National Energy Regulator Act (No.

40 of 2004). NERSA's mandate is to regulate the electricity in terms of the Electricity Regulation Act of 2006 (NERSA, n.d.).

For the purpose of this article, a hybrid PPP is a supplement of the classical PPP concept (Snopko, 2014), where the public sector finances the project or repays the private sector for financing the project. In hybrid projects like an IPP, the private partner finances the construction of the project infrastructure, which is required to generate a specific RE technology. The IPP then sells the generated RE to the central grid utility and operator – in the case of South Africa it is an SOE – and National Treasury provides guarantees for non-payment in the event that the SOE defaults on payment.

In a classic PPP the private sector earns unitary payments from the government. Secondly, IPPs in RE contribute 100% of the capital. In an IPP, private and public partners are not seen as mutual entities; the private partner is responsible for the development of the project, the private partner finances the project and carries most of the risk, and the only risk sharing that takes place is in the form of a government guarantee by the National Treasury in the event of a default of payment by the buyer (Eskom) of the RE (DoE, 2013).

In an IPP there is no transfer of an infrastructure facility to the public sector; the only asset that has public value that is transferred to a public entity (Eskom) is RE, which is sold to Eskom and connected to the national electricity grid. IPPs are also not classified under the Standardised PPP Provisions as PPPs, because the procurement process followed in IPPs does not follow all the steps outlined by Treasury Regulation 16. However, the institutional framework and procurement process for IPPs were developed by staff from the PPP Unit, based on Treasury Regulation 16, and the approach followed for IPPs was adapted from Treasury Regulation 16, thus it can be considered a hybrid PPP approach. It could also be considered a hybrid PPP approach as it combines elements of the classic PPP and a supplier agreement.

4.2. REIPPPP procurement

The REIPPPP has procured over 6.3 GW from 92 IPPs across four competitive bidding windows, representing approximately half of the total allocation set by the DoE of 13.025 megawatt (MW) (Clean Energy Pipeline, 2016). A Request for Proposals (RFP) is issued by the DoE; thereafter, bids are received and evaluated in three stages according to different sets of criteria. Tenders for different

technologies were held. Interested parties could simultaneously bid for more than one project and more than one technology. Projects had to be larger than 1 MW, and an upper limit was set on bids for different technologies. Bids were due within three months of the release of the RFP, and financial close was to take place within six months after the announcement of the preferred bidders. The RFP was divided into three sections, namely general requirements, qualification criteria, and evaluation criteria. Contractual documents included a standard PPA, an Implementation Agreement (IA), and a Direct Agreement (DA) (Eberhard & Kåberger, 2016).

A PPA is signed by the IPP and Eskom. The PPAs specify that contracts would have 20-year tenures from Commercial Operation Date (COD). The IAs are to be signed by the IPPs and the DoE. The DoE effectively provides a sovereign guarantee of payment to the IPPs, by requiring the DoE to make good on these payments in the event of an Eskom default. The IA also places obligations on the IPP to deliver economic development targets (Eberhard & Kåberger, 2016).

The South African Independent Power Producer Association (SAIPPA, n.d.) outlines the following key objectives for transforming electricity supply through IPPs:

- Creating an enabling IPP private investment environment.
- The establishment of open access to the grid for IPPs.
- The creation of enabling legislation and regulatory frameworks to facilitate competitive independent power generation.

The REIPPPP indirectly facilitates the achievement of three Sustainable Development Goals (SDGs). The United Nations (UN) launched the SDGs in 2015, as an extension of the Millennium Development Goals (MDGs), in its agenda on "Transforming Our World: The 2030 Agenda for Sustainable Development" (UN, n.d.). The REIPPPP contributes firstly to SDG 7 by ensuring access to affordable, reliable, sustainable, and modern energy for all. Secondly, the REIPPPP contributes to SDG 9 towards building resilient infrastructure, promoting inclusive and sustainable industrialisation, and fostering innovation. Lastly, these hybrid types of PPPs indirectly contribute through multi-stakeholder partnerships (MSPs) to the achievement of SDG 17 to strengthen the means of implementation and to revitalise the global partnership for sustainable development (Pisano, Lange, Berger &

Hametner, 2015). Thus, these hybrid types of PPPs are powerful vehicles for sustainable development.

It should be noted that PPP, as an offspring of NPM, implies alternative service delivery in the sense that the private sector provides a service on behalf of the government, which is not necessarily the case with a hybrid PPP, although public value is derived through electricity. The aim of IPPs is not to distribute electricity on the grid, as municipalities still remain responsible for delivering electricity through distribution to various local networks. In essence, the private sector generates the RE and sells it to Eskom, who then connects it to the grid, from where it is further distributed to households, citizens, businesses, and institutions.

4.3. Project financing

The majority of IPPs are funded by a conventional structure of sponsor equity and commercial bank debt; the most common ratio being 75:25. Local firms struggle to compete with experienced international project sponsors and equity investors as the programme assigns weight to the bidding power and selling price. Major international power producers include, for instance, Enel Green Power, Abengoa, Acciona, ACWA Power, Mainstream Renewable Power, Scatec Solar, Solairdirect, SolarReserve, and SunEdison. Major banks provide the majority of the debt financing. Debt financing has an average all-in cost of around 12% per year, with a common term of construction plus 15 to 17 years. Only a few international development banks have provided lending; the most prominent have been the World Bank Group, International Finance Corporation, US-based Overseas Private Investment Corporation, and German development bank KfW Bankengruppe (Clean Energy Pipeline, 2016).

4.4. Agreements and negotiations

One of the major successes in ensuring a sound pipeline of bankable projects has been the use of standardised PPAs. This REIPPPP process has generated a full suite of financing and security documents, including RFP documents, bid responses, PPAs, construction and operating contracts, site purchase or lease agreements, equipment supply and transport contracts, interconnection agreements, and joint venture and other contracts, which, among others, document shareholder and sponsor participation in the projects. PPAs deal with the revenue component of each power-generating project. Projected revenues, in turn, comprise the single most important criterion that will render a power generation project bankable and

ultimately capable of being on-sold to other investors. PPAs must be carefully crafted and must strive to balance the interest of the various parties; failing which, they can be a major source of risk for the various stakeholders (Louw & Bhengu, 2012).

There are commonly only two parties to a PPA; the IPP and the entity to which the IPP will sell the power it produces. In the South African context, the latter is Eskom. The government in which the IPP proposes to conduct its business, usually acting through the ministry/department responsible for local energy regulation (such as the DoE of South Africa), will usually have a material say in the content of the PPA, especially in circumstances where it guarantees offtake. Other stakeholders may include those who sponsor the IPPs' technological and private equity requirements, which in the South African context is mostly through FDIs, banks, and other financial institutions funding the project; the Engineering, Procurement, and Construction (EPC), and Operations and Maintenance (O&M) contractors responsible for construction and maintenance of the power plant, equipment, fuel, and other suppliers to the plant; insurers; landlords; and technical, financial, and legal advisors. The IPP can only be successful if there is cooperation and agreement between all stakeholders (Louw & Bhengu, 2012).

5. RESEARCH METHODOLOGY

The conceptual and documentary analysis was triangulated with data from two past research projects. The first research project, by Nel (2013), included a sample of 66 interviews and 168 surveys. Data were collected from public and private sector experts from the following case studies: PPP for the Department of Transport's Gautrain Rapid Rail Link; followed by Head Office Accommodation development PPPs for the Department of Rural Development and Land Reform and the Department of Basic Education; and the South African National Parks (SANParks) PPP concessionaire. The second research project is an ongoing project consisting of data collected from Western Cape IPPs. Data were derived from 13 qualitative semi-structured interviews, with public and private sector representatives. Thematic analysis was used to derive findings from the interviews.

6. DISCUSSION AND FINDINGS

The Danish Institute of International Studies (n.d.) outlined a number of building blocks for PPPs in the Global South context. These building blocks are prevalent in

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South African PPPs. The analysis in Tables 1 and 2 was derived from a documentary analysis.

Table 1: Building blocks of a PPP

Building blocks of PPPs		**Prevalence in IPPs**
1	Value for money	No transfer of facility takes place, the only asset transferred is RE
2	Affordability	Yes, RE prices are set by government
3	Risk transfer	Yes, private sector carries all the risk; however, the DoE carries the risk if Eskom defaults on payment
4	Private sector commercial gain and capacity	Yes
5	Preparation and planning for improved feasibility	Yes
6	Financing of the PPP process available	Private sector finances the entire process
7	Positive local impact	Yes
8	Citizen engagement	Yes
9	PPP framework available	Yes

Source: Author's own construction (2017)

Table 1 illustrates that IPPs share seven out of nine building blocks with classic PPPs. There is no transfer of a facility to government; however, RE can be considered an asset, as it provides public value, which is transferred to the grid and bought by Eskom. As mentioned earlier, the financing of a PPP and an IPP differs; IPPs contribute 100% to the project. In a PPP, the state would contribute, for example, 20%, and the private sector 80%.

Table 2: Procurement process in a PPP versus an IPP

PPP procurement	IPP procurement
RFP is issued	RFP is issued
Shortlisting of bidders	N/A
Draft RFP is issued	N/A
National Treasury approval 1	N/A
RFP issued to shortlisted bidders	N/A
Bids are received	Bids are received
Proposals are compared	Bids are evaluated
Preferred bidder is selected	Preferred bidder is selected
Value for money report is prepared	N/A
Treasury approval 2 is sought	N/A
Negotiations with preferred bidder takes place	N/A
PPP agreement and management plan are prepared	Major contractual agreements are signed
Final Treasury approval 3 is sought	N/A

Source: Adapted from the Danish Institute for International Studies (n.d.:6)

As illustrated in Table 2, the IPP procurement process has similarities to the PPP procurement process (which is based on Treasury Regulation 16); however, the IPP process is far simpler than the PPP process.

7. CONCLUSION

The concepts of PPP and hybrid PPP were examined in this article. The characteristics of PPPs and IPPs were also discussed. 'Hybrid' refers to the combination or mixing of two unique elements. In the context of this article, the term is sufficient to describe the IPP model, as it implies a unique combination of project finance and public-private cooperation. This hybrid PPP model is based on the PPP rationale of value for money, risk transfer, and affordability; however, the policy, governance, implementation, and structuring differ considerably from the conventional model described in the preceding sections. The findings of this article are that IPPs share a number of building blocks with PPPs and they represent hybrid PPPs. South Africa has a unique development context in terms of PPPs. As an emerging economy, South Africa has greatly benefited from the spill-over development effects of PPPs, through both conventional PPPs and hybrid PPPs. Some of the contributing factors for the successful institutionalisation of IPPs have been the development of centralised task team, an IPP Unit for RE projects; in addition, inflexible PPAs and improved EPC contracts have facilitated better

project management and performance. Project financing has also reduced underinvestment in the energy sector. This article is conceptual in nature, therefore future work can focus on collecting primary data through survey research to determine the legislative basis for hybrid PPP models and its applicability to sectors other than energy.

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