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Legal Formulation of Public-Private Partnership: Designing a Solar Power Plant in Underdeveloped Areas

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ABSTRACT

Underdeveloped regions have high potential for Solar Power Plants (PLTS), as data from the Institute for Essential Services Reform (IESR) indicates. The main challenges in developing PLTS in these areas are related to financing and the supply of solar panel materials. Therefore, the implementation of Presidential Regulation No. 105 of 2021 concerning the National Strategy for Accelerating the Development of Underdeveloped Regions for 2020-2024 (Perpres 105/2021) is necessary, mainly through the establishment of silica industry manufacturing companies to support PLTS and financing schemes such as Public-Private Partnerships (PPP) in PLTS development. The research problem focuses on how regulatory implementation in PLTS development can advance underdeveloped regions and how formulating the PPP financing scheme can support PLTS infrastructure development in these areas. This study aims to examine regulations in PLTS development that contribute to the progress of the remote regions and analyse the formulation of PPP financing schemes to accelerate PLTS infrastructure in underdeveloped areas. This study employs normative legal research using statutory, conceptual, and comparative approaches. The findings indicate that establishing silica industry manufacturing companies to support PLTS is essential, with various stakeholders' support, as Perpres 105/2021 stipulated. Additionally, a specific PPP regulation is required to govern PPP schemes in underdeveloped regions.

Keywords: PLTS; PPP; Underdeveloped Regions.

INTRODUCTION

As a country with many islands, Indonesia is committed to ensuring equal development in all regions, especially in island areas that face geographical challenges. These areas have received less development compared to other regions, including underdeveloped areas.[1] Underdeveloped areas are officially defined in the annex of Presidential Regulation No. 63 of 2020 on the Determination of Underdeveloped Areas for 2020-2024 (Perpres 63/2020). According to this regulation, 62 regencies are classified as underdeveloped based on specific criteria outlined in Article 2, Paragraph (1). One of these criteria is infrastructure and facilities, which include access to basic infrastructure such as electricity.

[1]Ombudsman RI. (2024). *Optimalisasi Pengawasan Di Daerah Tertinggal, Terdepan Dan Terluar (3T)*. Available from https://ombudsman.go.id:443/artikel/artikel/r/pwkinternal--optimalisasi-pengawasan-di-daerah-tertinggal-terdepan-dan-terluar-3t. [Accesed September 29, 2024].

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The lack of an electricity supply remains one of the main challenges in underdeveloped areas. According to data from the State Electricity Company (PLN), in the third quarter of 2023, there were 140 villages without electricity access, with most of them located in underdeveloped regions of Indonesia.[2] Data from the Ministry of Energy and Mineral Resources (ESDM) further explains that these unelectrified villages are estimated to include 185,662 households, all of which are in Papua, a designated underdeveloped area.[3] This electricity shortage is caused by several factors, including the difficulty in expanding PLN's power grid due to the remote locations. Limited access and mobility in these regions significantly increase the investment costs for developing the electricity network or building conventional power plants.[4] Therefore, it is essential to utilise local resources to meet electricity needs while supporting renewable energy development. In underdeveloped areas, renewable energy sources such as solar power can be a viable solution, particularly for island communities facing limited access to electricity.[5]

The use of renewable energy in underdeveloped areas follows Article 33, Paragraph 3 of the 1945 Constitution of Indonesia (UUD NRI 1945). This article states that the country's natural resources, including land and water, must be managed by the state to benefit the people. Using solar energy through PLTS, the government can improve development and provide electricity to help communities in underdeveloped areas live better. In addition, Article 20 of Law No. 30 of 2007 on Energy (UU 30/2007) supports this effort. It states that the government must prioritise providing energy to remote areas using local energy sources, especially renewable energy. The central and regional governments are responsible for ensuring this energy supply continues improving. [6]

The potential for using solar energy through PLTS is significant and supported by Institute for Essential Services Reform (IESR) data. According to their research, Papua, one of Indonesia's outermost regions, can generate up to 722 GWp of solar energy. This potential is further strengthened by Indonesia's climate, where most areas receive stable and intense sunlight, with an average daily radiation of around 4 kWh/m². Because of this, PLTS can be a powerful solution to electricity shortages in underdeveloped areas while also helping Indonesia achieve its goal in the Paris Agreement to reduce greenhouse gas emissions by 29% by 2030. However, building PLTS in underdeveloped areas comes with challenges, mainly the high investment costs required from developers. Additionally, the cost of constructing PLTS in these remote areas is often more expensive than in other regions.

Additionally, there are sustainability challenges, such as the limited availability of solar module components, forcing Indonesia to import materials from other countries.[7] This is despite the fact that the country has abundant supporting resources. Data from the Ministry of Energy and Mineral Resources (ESDM) shows that Indonesia has a significant supply of quartz sand, a key material for solar panels, with a potential of 25 billion tons and proven

[2]Agustina, C. D. (2024). *Wilayah 3T dan Energi Baru Terbarukan.* Available from https://zonaebt.com/regulasi-energi/wilayah-3t-dan-energi-baru-terbarukan/. [Accessed September 29, 2024].

[3]Databoks. (2024). *140 Desa Belum Berlistrik Pada 2023, Semua di Papua.* Available from https://databoks.katadata.co.id/utilitas/statistik/995fa99eb134297/140-desa-belum-berlistrik-pada-2023-semua-di-papua. [Accessed October 1, 2024].

[4]Kumparan. (2024). *Masalah Listrik dan Air di Daerah 3T: Dapat Diatasi dengan Tenaga Surya?* Available from https://kumparan.com/dwi-maulidia/masalah-listrik-dan-air-di-daerah-3t-dapat-diatasi-dengan-tenaga-surya-1xaRo06mfYZ. [Accessed September 29, 2024].

[5]Meita Rumbayan, Sherwin Sompie, & Rilya Rumbayan. (2021). *Penerapan teknologi energi terbarukan melalui model Science Techno Park di Desa Kiama Kepulauan Talaud.* Jurnal Abdimas Indonesia, **1**(4), 1–9.

[6]Santoso, N. I. (2024). *Percepatan transisi energi listrik dalam mendukung green economy guna mewujudkan ketahanan energi nasional.* Available from http://lib.lemhannas.go.id/public/media/catalog/0010-092400000000009/swf/7788/065%20-%20Nugroho%20Imam%20Santoso.pdf.

[7]I Haryanto, M Sakti, HI Bhagaskara, SN Puteri, YEL Tobing. (2022). Rekonstruksi Hukum Pembangkit Listrik Tenaga Surya berdasarkan Analisis Ekonomi. *Bina Hukum Lingkungan*, *6*(3), 317-334.

reserves of 330 million tons, including in Papua.[8] To overcome this issue, collaboration is needed between communities, the government, businesses, and academics. Many countries that have successfully developed PLTS involve all four sectors to drive innovation and growth in the solar energy industry. This approach also aligns with Presidential Regulation No. 105 of 2021 on the National Strategy for Accelerating Development in Underdeveloped Regions for 2020-2024 (Perpres 105/2021).

To address the financial challenges of developing PLTS in underdeveloped areas, the Indonesian government has introduced a PPP scheme. This scheme allows the government to work with private companies to fund infrastructure projects while sharing risks fairly. The PPP framework is regulated under Presidential Regulation No. 38 of 2015 (Perpres 38/2015). For PLTS development in underdeveloped areas, the PPP scheme can be a financing solution. However, there are no specific regulations that tailor PPP projects to the unique conditions of these regions. To make PPP more effective, a special regulation is needed that considers the specific needs of underdeveloped areas and allows businesses to contribute funding. By creating a specific PPP regulation for underdeveloped areas, the government can ensure better funding solutions for PLTS projects in these regions.

Previous research on this study includes a study titled "Rekonstruksi Hukum Pembangkit Listrik Tenaga Surya Berdasarkan Analisis Ekonomi" by Imam Haryanto et al. in 2022. This study suggests that Indonesia should develop its solar panel production by building local factories. Based on this, this research will focus on how solar panel production can be created in underdeveloped areas as part of implementing relevant regulations. Another study, "Dampak Elektrifikasi Terhadap Perekonomian Dan Strategi Pembiayaan Pengembangan Sumber Energi Listrik Terbarukan Untuk Pembangunan Berkelanjutan Di Indonesia," by Afif Akbar Syawala and Estro Dariatno Sihaloho in 2023, discusses different ways to fund renewable energy projects, such as green sukuk and green bonds. Taking inspiration from this, this research will explore how the PPP scheme can be used to Finance PLTS in underdeveloped areas.

Thus, this research addresses the main issues of how implementing regulations in PLTS development can contribute to the advancement of underdeveloped areas and how the PPP financing scheme can be formulated to support the infrastructure development of PLTS in these regions.

METHOD

Research Methodology is a method used to achieve research objectives. This study employs the Normative Research Method, which analyses applicable laws and regulations relevant to the legal issues discussed.[9] The author collects and examines legal sources, including legal norms, historical perspectives, journal articles, and legal commentaries. [10] The research applies three approaches: the statute approach, the conceptual approach, and the comparative approach. The statute approach involves reviewing laws and regulations related to the issue, particularly legal frameworks for PPP financing in PLTS development in underdeveloped areas.[11] The conceptual approach explores ideas from scholars and legal doctrines to build strong legal

[8]Media Indonesia. (2022). *Potensi pasir kuarsa Indonesia untuk sel panel surya.* Available from https://mediaindonesia.com/ekonomi/547121/potensi-pasir-kuarsa-indonesia-untuk-sel-panel-surya. [Accessed October 6, 2024].

[9]N Qamar et al. (2017). *Metode Penelitian Hukum (Legal Research Methods)*. CV. Social Politic Genius (SIGn).

[10]V Prahassacitta, V(2019). Penelitian hukum normatif dan penelitian hukum yurudis. *Fakultas Humaniora, Jurusan Busines Law, Universitas Bina Nusantara, Jakarta, Agustus.*

[11]SH Djulaeka, SH Devi Rahayu (2020). *Buku Ajar: Metode Penelitian Hukum*. Scopindo Media Pustaka.

arguments.[12] The comparative approach compares laws from other countries which have successfully developed PLTS to formulate a well-balanced legal framework.[13]

ANALYSIS AND DISCUSSION

Implementation of Regulations in PLTS Development to Advance Underdeveloped Areas

The development of PLTS in underdeveloped areas is part of Indonesia's plan to expand renewable energy, as stated in Presidential Regulation No. 22 of 2017 (Perpres 22/2017) on the National Energy General Plan (RUEN). Many underdeveloped regions, such as Papua, have great potential for PLTS, with an estimated capacity of 327.2 GW.[14] However, this development faces challenges, particularly in producing PLTS components domestically. Even though PLTS technology costs are expected to decrease, the fact that component production is concentrated in only a few countries raises concerns about supply disruptions, which could make the energy transition more expensive.[15]

Underdeveloped areas, particularly Papua, which still lack electricity access, have great potential for PLTS components. One key material is silicon, which naturally occurs as silica and quartz sand—common materials used in solar panels.[16] According to Indonesia's Ministry of Energy and Mineral Resources (ESDM), the country has vast quartz sand resources, reaching 25 billion tons, with 330 million tons of proven reserves spread across 23 provinces, including Papua.[17] However, despite this enormous potential, Indonesia's quartz sand processing into silicon remains very limited, with no such facilities in Papua.[18] Therefore, as suggested by the Institute for Essential Services Reform (IESR), developing silica manufacturing companies to produce domestic solar panels is crucial for strengthening the PLTS industry supply chain.[19]

Developing silica manufacturing companies in underdeveloped areas as part of the PLTS industry supply chain is also a step toward maximizing the Domestic Component Level (TKDN), as regulated in Minister of Energy and Mineral Resources Regulation No. 11 of 2024 on the Use of Domestic Products (Permen ESDM PPDN).[20] Additionally, establishing PLTS manufacturing companies aims to accelerate the provision of sufficient, high-quality, and affordable electricity for communities in underdeveloped and remote rural areas, in line with Minister of Energy and Mineral Resources Regulation No. 38 of 2016 on Rural Electrification Acceleration (Permen ESDM No. 38/2016). However, the development of domestic silica manufacturing for solar panels in underdeveloped regions requires support from various stakeholders, including the government, businesses, academics, and local communities.[21]

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[12]SH Bachtiar (2021). *Mendesain Penelitian Hukum*. Deepublish

[13]M Siems (2022). *Comparative law*. Cambridge University Press.

[14]Putra, D. A. (2023). *ESDM: Papua punya modal pengembangan energi terbarukan.* Available from https://tirto.id/esdm-papua-punya-modal-pengembangan-energi-terbarukan-gLmc. [Accessed December 3, 2024].

[15]Independen.id. (2024, August 23). *Tantangan industri PLTS Indonesia.* Available from https://independen.id/tantangan-industri-plts-indonesia. [Accessed December 3, 2024].

[16]LI Fatmawati, A Latif, FS Nanda (2020). Studi Ekstraksi Silikon dari Pasir Silika Indonesia dengan Metode Metalotermik. *Prosiding Temu Profesi Tahunan PERHAPI*, 665-676.

[17]Nastasia H. Soeriyadi, David Firnando Silalahi, & Denny Gunawan. (2024, February 13). *Indonesia perlu membangun lebih banyak pabrik PLTS untuk ekspansi energi surya besar-besaran.* Available from http://theconversation.com/indonesia-perlu-membangun-lebih-banyak-pabrik-plts-untuk-ekspansi-energi-surya-besar-besaran-223001. [Accessed December 5, 2024].

[18]Soeriyadi, Silalahi, and Gunawan

[19]Prismono. (2024, August 13). *IESR dorong pemerintah perkuat rantai pasok industri surya.* Available from https://petrominer.com/iesr-dorong-pemerintah-perkuat-rantai-pasok-industri-surya/. [Accessed December 5, 2024].

[20]DA Ravianti (2024). ANALISIS TINGKAT KOMPONEN DALAM NEGERI (TKDN) TERHADAP IKLIM INVESTASI ENERGI SURYA DI INDONESIA. *Honeste Vivere*, *34*(1), 41-51.

[21] L Sun, P Zhou. (2022) Solar Energy Resources in Desertification Regions of China and Development Suggestions. *Environment, Resource and Ecology Journal.*

Countries that have successfully implemented PLTS in remote areas, such as China, Brazil, and Vietnam, emphasize PLTS as a multi-faceted initiative driven by collaboration among these key sectors.[22]

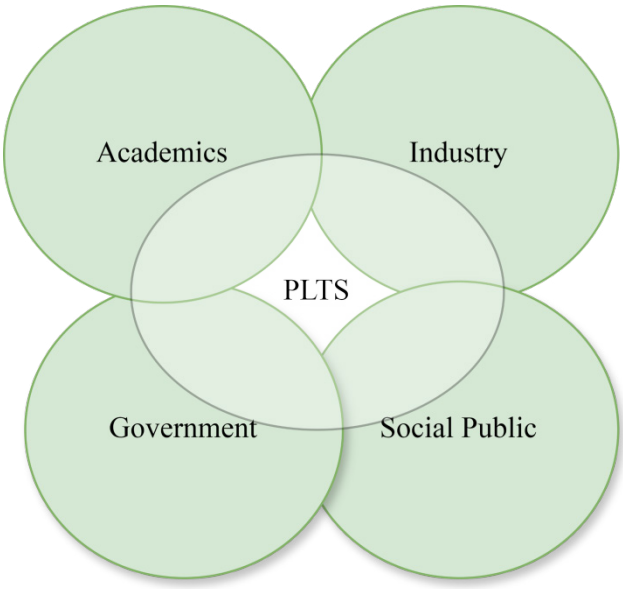

Image 1. Concept of Stakeholder Collaboration in PLTS Development

Collaboration among various stakeholders in developing PLTS in underdeveloped areas is essential to ensuring a stable supply chain for the PLTS industry in these regions. This collaboration highlights the importance of cooperation between the government, industry, society, and academia, as outlined in Presidential Regulation No. 105 of 2021 on the National Strategy for Accelerating Development in Underdeveloped Areas for 2020-2024 (Perpres 105/2021). The regulation emphasises the need for a collaborative strategy in overcoming underdevelopment, involving cross-sector and multi-stakeholder participation, including central and regional governments, through funding from the State Budget (APBN) and Regional Budget (APBD), as well as support from businesses, partners, and local communities at the village level.

The government is responsible for creating a regulatory environment that supports PLTS development in underdeveloped areas, including providing incentives.[23] Academics contribute through research to identify suitable technological solutions for local contexts and develop training programs to enhance community skills in managing and maintaining PLTS.[24] The industrial sector plays a crucial role by increasing the production of silica-based solar panels to meet the growing demand for renewable energy in these areas.[25] Meanwhile, local communities can be involved in the mining and processing of silica sand, ensuring active participation in the supply chain.

[22]Enyi Mu et al. (2024) Chasing the Sun: How Does Policy-Induced Local Demand Promote the Spatio-Temporal Evolution of China's Solar Photovoltaic Industry. *Available at SSRN 4853713*.

[23]MC Ugwu, AO Adewusi, NE Nwokolo. (2024). The role of public-private partnerships in building clean energy infrastructure in The United States and Nigeria. *International Journal of Management & Entrepreneurship Research*, *6*(4), 1049-1068.

[24]AMF Gomes, MP Pivatto, M Braga, LR do Nascimento, R Rüther (2024). IMPACTOS DA COOPERAÇÃO GOVERNO-UNIVERSIDADE-INDÚSTRIA NA INOVAÇÃO NO SETOR DE ENERGIA SOLAR FOTOVOLTAICA: ESTUDO DE CASO. *Revista Brasileira de Energia Solar*, *15*(1), 64-72.

[25]GA Pinilla-De La Cruz et al. (2022). Unveiling the shades of partnerships for the energy transition and sustainable development: Connecting public–private partnerships and emerging hybrid schemes. *Sustainable Development*, *30*(5), 1370-1386.

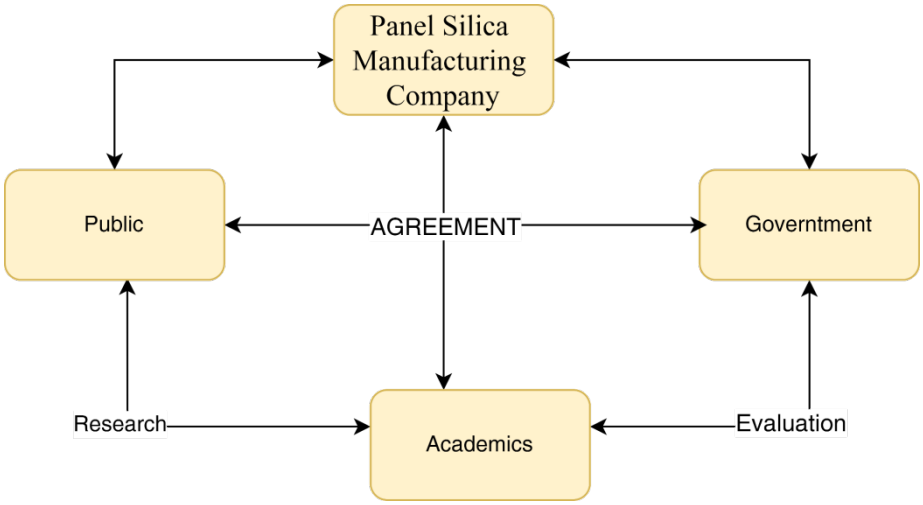

Image 2. Scheme of Collaboration Between Parties

The concept of multi-stakeholder collaboration in establishing silica solar panel manufacturing companies in underdeveloped areas aligns with the Collaborative Governance Theory by O'Flynn and Wanna. This theory emphasises cooperation among various interdependent stakeholders from different sectors to develop and implement legal policies.[26] effectively. In this context, collaboration is essential to ensure the successful development of silica manufacturing companies in underdeveloped regions, ultimately driving regional progress. These silica manufacturing companies would be formed as joint ventures between multiple companies with expertise in raw material processing and logistics and foreign firms with advanced technology. This approach aims to enhance local silica manufacturing efficiency while reducing initial investment costs.[27]

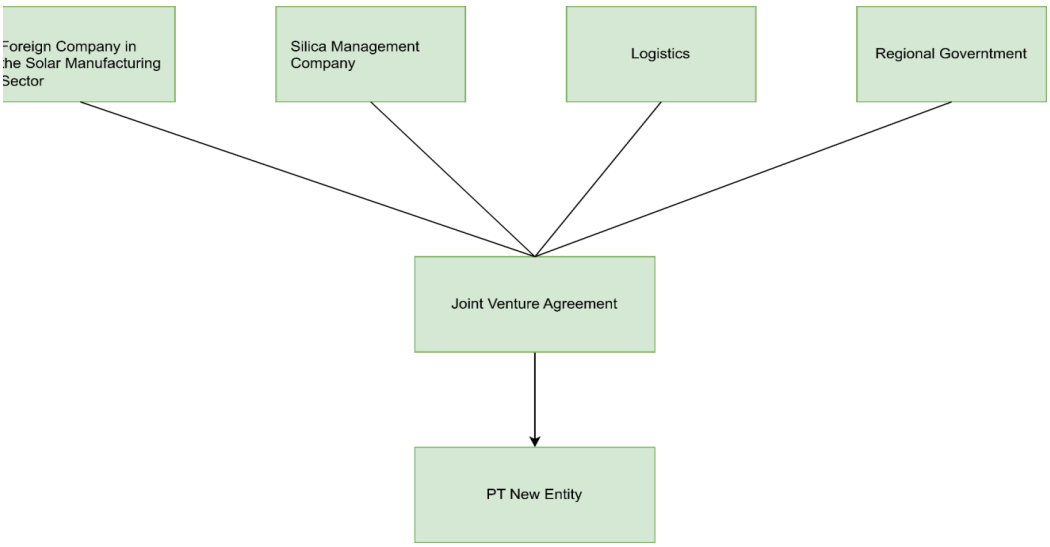

Image 3: Establishment of a Silica Manufacturing Company

The involvement of foreign companies in establishing new companies must also take into account compliance with capital regulations in Indonesia, as stipulated in Article 1, Point 3

[26]R Susilowati, et al (2022). Analisis Collaborative Governance dalam Penyelenggaraan Musyawarah Rencana Pembangunan Desa Sungai Rambutan. *INDONESIAN GOVERNANCE JOURNAL: KAJIAN POLITIK-PEMERINTAHAN*, *5*(2), 96-111.

[27]E Meygoonpoury, MK Ghadim, Z Ziabakhsh-Ganji. (2024). Internationalization of renewable energy base businesses with a combined approach to networking and collaborative competition. *Results in Engineering*, *21*, 101726.

of Law No. 25 of 2007 on Investment, which emphasizes that foreign investment refers to the activity of investing to conduct business within the territory of the Republic of Indonesia, carried out by foreign investors, either with entirely foreign capital or in partnership with domestic investors. This involvement is intended to support technology transfer, improve human resources (HR) quality, and address the significant capital challenges in developing a solar panel silica manufacturing project in underdeveloped areas. The regionally owned Enterprise (BUMD), PT New Entity, will act as the domestic solar panel silica manufacturing company in this case. The BUMD was established to provide benefits for the economic development of underdeveloped regions, offer public utility for meeting the basic needs of the community in these areas, and generate profit and/or gain.[28]

The government and educational institutions will collaborate in evaluation, research, and project development to ensure the business's sustainability and competitiveness. This collaboration is expected to create innovations that meet market and community needs, improving the efficiency of domestic solar panel production and opening up new opportunities in renewable energy technology development. Through this partnership, PT Entitas Baru is expected to play a key role in achieving energy independence through solar power for underdeveloped areas while helping reduce economic gaps in these regions. Ultimately, the main goals of creating this new entity—improving public welfare, supporting regional economic growth, and reducing dependence on imported products—can be successfully achieved.

Formulation of the PPP Financing Scheme in Supporting the Development of PLTS Infrastructure in Underdeveloped Areas

The International Renewable Energy Agency (IRENA) states that a significant barrier in the solar power sector is the lack of investment.[29] However, investment plays a crucial role in the development of a region, including underdeveloped areas.[30] The government has introduced the PPP scheme to reduce the state revenue deficit and enhance the provision of basic infrastructure, as outlined in Presidential Regulation No. 38/2015.[31] Therefore, in this context, outer regions can utilise the PPP scheme as a financing tool for PLTS infrastructure to achieve social welfare and provide direct impacts and benefits to the community.[32]

Implementing the PPP scheme for building PLTS in underdeveloped areas faces several challenges. One of the main issues is the lack of specific regulations that govern how PPPs should work to provide electricity in these areas. This makes it difficult for businesses to invest in the sector because of uncertainty about the rules. However, underdeveloped areas are a key focus for the government in its efforts to ensure more equal development across Indonesia. To overcome these challenges, the government needs to play an active role in supporting the PPP scheme in these regions. One way to do this is by creating special regulations, such as a presidential decree, that ensure the availability of critical infrastructure like solar panels, which are crucial for PLTS development. This kind of support will not only provide certainty for

[28]Humas. (2022, February 12). *Tata kelola badan usaha milik daerah (BUMD) dalam peningkatan perekonomian daerah.* Available from https://setkab.go.id/tata-kelola-badan-usaha-milik-daerah-bumd-dalam-peningkatan-perekonomian-daerah/. [Accessed December 5, 2024].

[29]Databoks. (2024). *Papua punya pembangkit listrik energi terbarukan terbanyak di RI.* Available from https://databoks.katadata.co.id/energi/statistik/ebc3a2c8076d13f/papua-punya-pembangkit-listrik-energi-terbarukan-terbanyak-di-ri. [Accessed October 17, 2024].

[30]A Febriyanto. (2024). Determinan Pembangunan Desa Tertinggal, Terdepan, dan Terluar (3T) di Indonesia. *EKOMA: Jurnal Ekonomi, Manajemen, Akuntansi*, *3*(4), 1693-1707.

[31]A Rahman. (2021). Quo Vadis Visi Negara Maju 2045. *Book Chapter*, *1*.

[32]MR Karsayuda, M Fadli, M Khusaini, A Kusumaningrum. (2023). KEMANFAATAN PEMBIAYAAN INFRASTRUKTUR NON KONVENSIONAL SEBAGAI ALTERNATIF PEMBIAYAAN INFRASTRUKTUR GUNA KETAHANAN EKONOMI NASIONAL. *Klausula (Jurnal Hukum Tata Negara, Hukum Adminitrasi, Pidana Dan Perdata)*, *2*(2), 79-96.

businesses but also help speed up the delivery of reliable and sustainable electricity to areas with limited access to energy.

Looking at the practices in developed countries like Canada, which has specific regulations and frameworks for PPPs in one of its regions, British Columbia, we can learn important lessons.[33] These regulations aim to boost infrastructure development while reducing the risks associated with such projects. They also provide a structured approach to PPPs, ensuring that contracts are clear and enforceable. One key guideline is the allocation of risks, particularly emphasising that demand risks should be borne by the public sector.[34] If we relate this to underdeveloped areas, the PPP model can be adapted to suit investors' considerations, who are key partners in developing PLTS. This adaptation can be done by ensuring the involvement of regional government-owned enterprises (BUMD) in manufacturing solar panel silica and establishing precise PPP mechanisms in these areas. The BUMD manufacturing company will play a crucial role as the supplier of solar panel materials, collaborating with the Executing Business Entity (BUP) of the PLTS, which will be responsible for operating the PLTS.

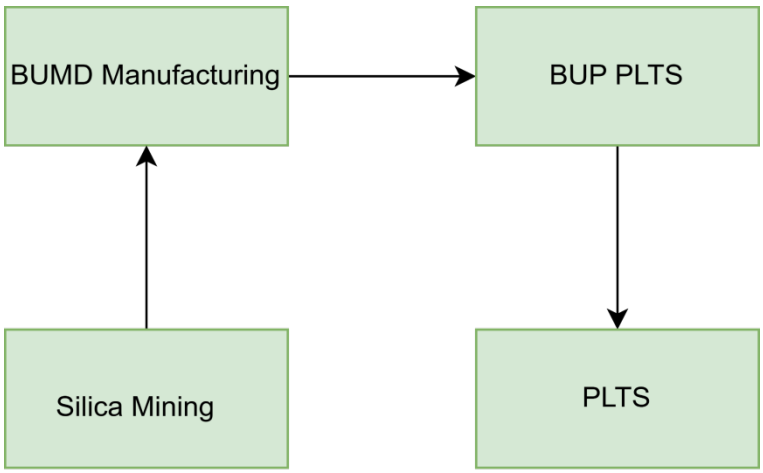

Image 4: Collaboration Between BUMD Manufacturing and BUP PLTS

The existence of clear regulations aligns with Richard Posner's Economic Analysis of Law theory, which views law as a tool to improve economic efficiency and drive growth. According to this approach, laws should not only regulate but also support economic activities to become more productive and sustainable.[35] The legal framework ensures that investments in underdeveloped areas are more secure and efficient by establishing clear rules for regional government-owned enterprises (BUMD) in solar panel silica manufacturing and defining a structured PPP mechanism. This way, the law serves not merely as a set of regulations but also as a means to encourage economic development and sustainability in these regions.

The PPP scheme for PLTS in underdeveloped areas can utilise a mechanism that ensures the certainty of raw material supply. Eventually, the ownership of the power plant assets will be transferred to the public sector (PLN) upon the expiration of the PPP contract. Contractually, the Private Business Entity (BUP) is responsible for the design, construction, financing, operation, and maintenance of the power generation facility (plant) and will transfer asset ownership to the government at the end of the concession period. The electricity generated

[33]CB Casady, RR Geddes. (2019). *Private participation in US infrastructure: The role of regional PPP units. In Public–Private Partnerships for Infrastructure Development* (pp. 224-242). Edward Elgar Publishing.
[34]E Engel, R Fischer, A Galetovic. (2023). The regulation of public-private partnerships. In *Handbook on Transport Pricing and Financing* (pp. 311-329). Edward Elgar Publishing.
[35]E Mackaay. (2021). *Law and economics for civil law systems*. Edward Elgar Publishing.

will then be sold by the BUP to PLN, which operates as a State-Owned Enterprise (BUMN) in the electricity sector and also acts as the Government Contracting Agency (PJPK) through a Power Purchase Agreement ("PPA"). As the sole electricity off-taker, PLN will make periodic payments to the BUP based on a take-or-pay scheme throughout the PPA period. Consequently, PLN's fulfillment of its financial obligations remains the primary risk in this scheme. [36]

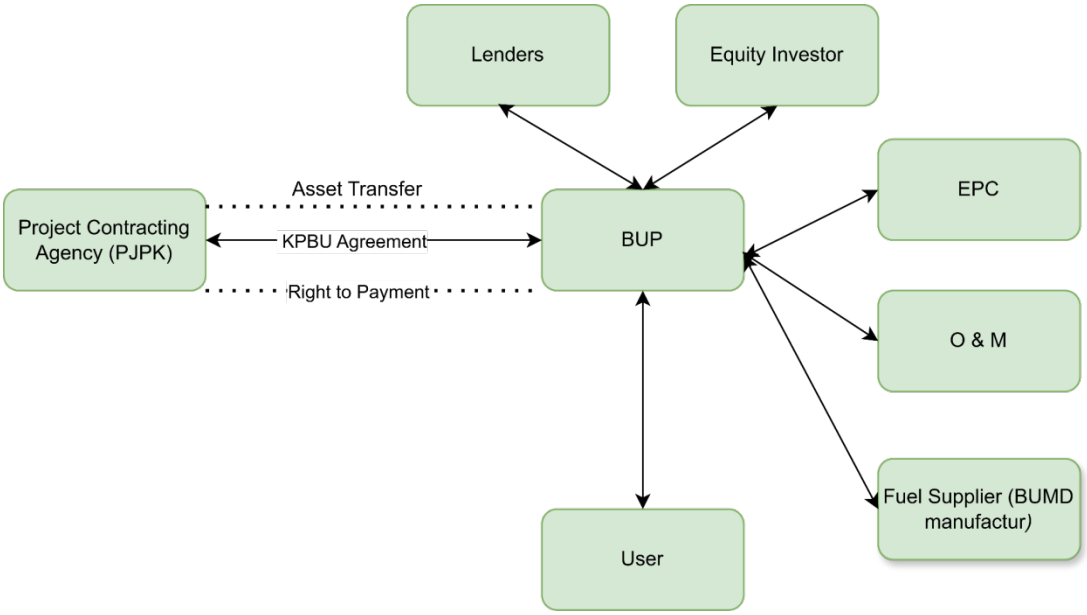

Image 5: PPP Scheme for Underdeveloped Regions

In this formulation, the BUP PLTS is a limited liability company established by a business entity selected through the BUP procurement process to seek a partnership for the PPP project. Essentially, developing the PLTS project requires a partnership with entities with prior experience in PLTS construction. Companies specialising in PLTS can collaborate with Regional-Owned Enterprises (BUMD) in underdeveloped areas to establish a new entity that will act as the equity investor for the BUP PLTS. The formation of a new BUMD for the BUP PLTS must comply with Government Regulation No. 54 of 2017 on Regional-Owned Enterprises (PP BUMD), which stipulates a minimum capital contribution threshold from non-BUMD companies, with an accumulation limit of up to 49 percent. Applying this threshold ensures that the newly formed entity remains under regional ownership, with the BUMD holding a majority stake of 51 percent.

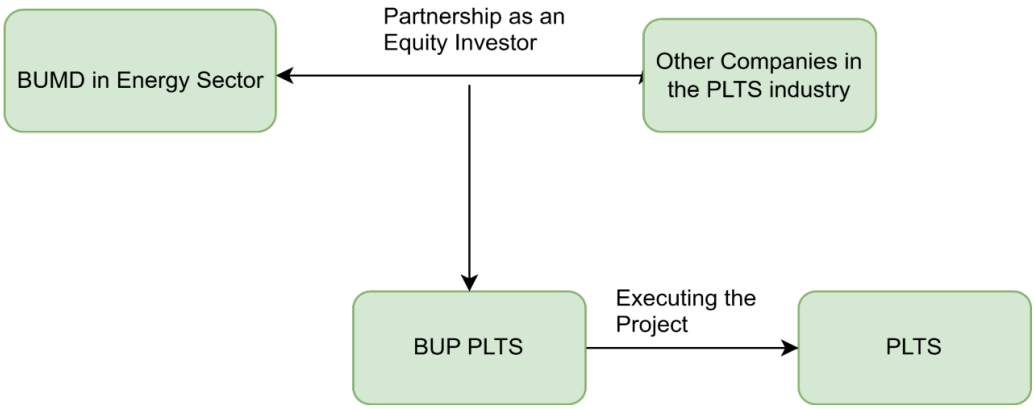

Image 6. Establishment of PLTS in Underdeveloped Regions

[36]PT PII. (2023). Acuan Alokasi Risiko 2023

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With this ownership scheme, the PPP PLTS project can ensure a balance between private sector participation and government ownership dominance through BUMD. First, this structure facilitates technology transfer and capacity building for BUMD in managing renewable energy projects. Second, it strengthens the regional economy by creating new job opportunities and increasing Regional Original Revenue (PAD) by managing productive assets. Third, the synergy between BUMD and private companies in this project can accelerate the equitable development of energy infrastructure, particularly in underdeveloped areas. Thus, this partnership model is not solely profit-oriented but also serves as a strategic instrument to promote energy democratisation and sustainable development in Indonesia.

CONCLUSION

Based on the discussion above, the author concludes that implementing regulatory frameworks in developing PLTS for underdeveloped areas can facilitate the establishment of a silica manufacturing company in the form of a BUMD. This BUMD would collaborate with foreign companies to produce domestically manufactured solar panels as part of an effort to accelerate the provision of sufficient electricity with good quality and affordable prices for communities in underdeveloped rural areas and remote villages, as mandated by Ministerial Regulation of Energy and Mineral Resources (Permen ESDM) No. 38/2016. This initiative would also require support from various stakeholders, including the community, government, private sector, and academia, by Presidential Regulation (Perpres) No. 105/2021. The Silica Manufacturing BUMD would later serve as a raw material supplier within the PPP scheme for developing PLTS in underdeveloped regions, collaborating with the BUP PLTS, which operates as a regional BUMD in outermost areas. The specific PPP scheme formulation for these outermost regions should be regulated through a dedicated Presidential Regulation to provide legal certainty for businesses while accelerating the provision of reliable and sustainable electricity in underdeveloped areas.

Based on this conclusion, the author recommends the establishment of a forum or committee involving various stakeholders, including the government, communities, academics, and industry players, to facilitate more effective Communication and collaboration in developing PLTS projects in underdeveloped areas. This forum is expected to serve as a platform for all parties involved to discuss, strategise, and evaluate each stage of project implementation, ensuring alignment with the needs and characteristics of the respective regions. Furthermore, a dedicated Presidential Regulation should be formulated to address the PPP scheme in underdeveloped areas to create more comprehensive regulations and provide legal certainty for businesses and local governments. This regulation must provide a detailed framework regarding the implementation mechanisms of PPP, incentives for investors, sustainable financing schemes, and project oversight to ensure adherence to the principles of accountability and sustainability. Additionally, to ensure the success of this program, government support through establishing BUMD as the primary supplier for BUP PLTS is a strategic step that must be realised. The BUMD would be crucial in providing raw materials and essential infrastructure, ensuring the sustainability and operational efficiency of PLTS projects. With synergy among various stakeholders and strong regulatory support, the development of PLTS in underdeveloped areas is expected to be more effective, impactful, and capable of delivering maximum benefits for communities and economic growth.

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