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Aspects of Environmental Justice in Construction Regulations for New Renewable Energy Development in Remote Villages in Indonesia

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Abstrak

Hasil penelitian menunjukkan bahwa peraturan pemerintah saat ini tidak menjamin akses listrik bagi masyarakat lokal di desa-desa terpencil dan tertinggal, karena ketergantungan pada PT. (Persero) PLN, infrastruktur konektivitas yang belum memadai, dan ketimpangan penduduk di desa-desa terpencil. Oleh karena itu, upaya dilakukan untuk memastikan perlakuan adil terhadap lingkungan dan masyarakat lokal dalam konteks proyek energi terbarukan di daerah pedesaan. RUU EBT diharapkan dapat menjadi payung hukum yang kuat bagi desa-desa yang belum memiliki listrik, dengan mengutamakan penggunaan energi lokal dan mengatasi permasalahan perizinan, akses, insentif investasi, perlindungan lingkungan, partisipasi masyarakat dan distribusi manfaat yang adil. Analisis untuk mengidentifikasi tantangan dan peluang dalam mencapai keadilan lingkungan dalam pengembangan energi baru terbarukan di lingkungan pedesaan Indonesia dalam meningkatkan struktur sosial yang mendukung pembangkitan energi lokal berkelanjutan dengan manfaat sosial dan ekonomi bagi penduduk lokal.

Kata Kunci: *Energi, Baru, Terbarukan, EBT, Lokal.*

Abstract

The research results show that current government regulations do not guarantee access to electricity for local communities in remote and underdeveloped villages, due to dependence on PT. (Persero) PLN, inadequate connectivity infrastructure, and population inequality in remote villages. Therefore, efforts are made to ensure fair treatment of the environment and local communities in the context of renewable energy projects in rural areas. The EBT Bill is expected to become a strong legal umbrella for villages that do not yet have electricity, by prioritizing the use of local energy and addressing issues of licensing, access, investment incentives, environmental protection, public participation and fair distribution of benefits. Analysis of identifying challenges and opportunities in achieving environmental justice in the development of new, renewable energy in Indonesia's rural environment in improving social structures that support sustainable local energy generation with social and economic benefits for local residents.

Keywords: *Energy, New, Renewable, EBT, Local.*

INTRODUCTION

Energy according to Jabeen *et al.* (2021) is essentially a concept that is difficult to understand because it is intangible physically capable of working and overcoming both kinetic and potential restraining forces. Furthermore, these energy sources need to be processed so that they are created and distributed adequately. This means that (Sayekti, 2019) the size and changes in the load of the electric power system depend on the utilization of electrical energy from these customers. However, efforts are always made to maintain a balance between the power created by the generator and the system load to keep it balanced (Qazi et al., 2019).

Based on the 2020-2024 National Medium-Term Development Plan (RPJMN), Indonesia targets to achieve an electrification ratio of 100% by 2024 (Republik Indonesia, 2020). Furthermore, ESDM data, by the end of 2022, the electrification ratio has reached 99.63%, an increase of 1.8% compared to compared to the previous year, which was 99.45% (Kementerian Energi dan Sumber Daya Mineral, 2023) and exceeded the 2018 target of 97.5% (Mahali, 2020), except for the NTT Province which was 62% (Fakhrudin, Chrismadha, & Setiawan, 2014). Then, based on Presidential Decree 22/2017, in order to meet the electrification ratio of 99.9% in 2025, the government is trying to encourage a reduction in the use of fossil energy at lower prices. The electrification ratio is defined as the number of houses that are connected to a power source, without considering the quality of electricity service received by the community (Pusat Data dan Informasi Kementerian Perindustrian, 2020).

The development of New and Renewable Energy (EBT) is an important solution in facing the challenges of climate change and dependence on limited fossil energy resources. EBT promises clean, sustainable and renewable energy, with a lower environmental impact compared to conventional energy sources. Nationally, the utilization of new and renewable energy (Republik Indonesia, 2017) contributes to the total energy use in Indonesia ± 23% or = 92.2 Metric Tons (MTOE) or around 45 Giga Watts (GW). Moreover, for isolated areas, the use of renewable energy as a source of electricity is more profitable than the expansion of the PLN network (Sallata, Nugroho, & Wakka, 2015). For this reason, increasing awareness of the importance of using renewable energy is an effort to mitigate climate change and is considered more environmentally friendly.

The idea of sustainable energy first emerged in the 1970s as an alternative to reducing dependence on nuclear and fossil fuels. Renewable energy, such as solar and wind energy, is a natural resource that can be renewed in a sustainable manner. System dynamics, introduced in the 1950s, is used to study and manage complex systems using correlation analysis and the principle of interdependence (Ridwan, Kulsum, & Sinurat, 2019). LEAP software was developed by the Stockholm Environment Institute in 1981 to analyze, evaluate policies, and plan energy (Habib, Muhammad Alhada Fuadilah; Nuriski, Wahyu Nita Kurrotaa'yun; Zamzami, 2022). The LEAP modeling methodology is used in greenhouse gas management and has been implemented in national and regional action plans (Bielska, Renata Marks; Bielski, Stanisław; Pik, Katarzyna, Kurowska, 2022). Utilization of renewable energy sources is expected to have a positive impact on the availability of clean energy and sustainability, as well as meeting the needs of heating, cooling, transportation and energy services in remote areas (Lumbangaol, 2007).

However, the existence of EBT is currently still concentrated in urban areas and areas that are more economically advanced. In remote, underdeveloped areas, as well as local villages, access to EBT is often limited or even non-existent. Data from BPS shows that in 2018 there were still 2,281 villages that had not yet had electricity (Fajar Istikhomah & Agus Riyadi, 2021). Meanwhile, data from the Ministry of Energy and Mineral Resources and the 2014 Podes, there are around 2,519 villages in Indonesia that do not yet have electricity (Kementerian Energi dan Sumber Daya Mineral, 2019), although the Government in 2017 was able to reduce it to 1,698 villages (Sri Nurhayati Qodriyatun, 2021). Furthermore, according to BPS data (2018), the electrification ratio value of 98.05% indicates that there is still a proportion of around 1.95% of households or 1,309,881 that have not enjoyed the electricity provided by PLN (Wardhana & Ma'rifatullah, 2019). Based on further research by Widaningsih (2014), Indonesia still depends on PT. (Persero) PLN which has not been able

to reach and supply electricity to all corners of the archipelago. For example in Papua, PLN is only able to increase the electricity capacity in 20 villages every year (Ayu Arsita, Eko Saputro, & Susanto, 2021). This limitation is due to a number of factors, including a lack of infrastructure, limited knowledge and skills, and legal and regulatory constraints.

From a legal perspective, the development of local EBT in remote and underdeveloped areas, as well as local villages, has complex implications. The 1945 Constitution of the Republic of Indonesia (1945 Constitution) has mandated environmental protection as a constitutional right for every citizen. The government has an obligation to protect and preserve the environment for the benefit of present and future generations. In addition, the Government also needs to consider the configuration of local EBT development policies in remote and lagging areas from the aspect of service continuity so that when the program is handed over to the community and managed by designated institutions, its operations continue and have a positive correlation to improving people's living standards (Juwito & Haryono, 2013).

In addition, within the national legal framework, there are several laws and regulations that regulate the energy and environmental sectors. The existence of Law Number 30 of 2007 concerning Energy (UU 30/2007) states that the utilization of energy must be carried out in an efficient, sustainable and environmentally friendly manner. In addition, Law Number 32 of 2009 concerning Environmental Protection and Management regulates environmental protection through the development and utilization of EBT.

The government has actually implemented three main approaches to meet energy access for the community, namely increasing the PLN network, isolated grid, and distributing LTSHE (Solar Power Saving Energy Services). However, despite the existence of relevant laws and regulations, the implementation and enforcement of the law in practice still faces challenges. Some of the legal problems that are often encountered include complicated and lengthy permits, lack of legal certainty, and a lack of financial support and incentives for local EBT development, in addition to Indonesia's difficult geographical conditions which present challenges in expanding the PLN network, because it requires a long time and costs. tall. Centralized systems that were originally created for generational economic value, however, still show weaknesses in the contributions of global warming and climate change including passive individual behavior, disparities between production and utilization, potential for inefficiency and disruption, and vulnerable system stability (Greenius *et al.*, 2010).(Greenius, Jagniecki, & Thompson, 2010)[)]

The conception of environmental justice is a complex interrelationship between ecology, equity, and access creating a basis for imagining a sustainable and just future,

with urgent attention to strategic interventions to address environmental disparities that often affect educational access and outcomes and reinforce cycles of inequality, especially for marginalized communities (Bullard, 1990). The problem of village communities' access to adequate electricity is still an aspect of environmental justice that needs attention from the central and regional governments and related parties.

By taking into account the matters mentioned above, this study aims to explore the idea of developing local EBT in remote and underdeveloped areas, as well as local villages, with a focus on a legal perspective. In addition, a dynamic system model was also developed to carry out policy simulations for the development of Renewable Energy during the period 2018 to 2027 (Targa Sapanji & Hamdani, 2020). Through a deeper understanding of the legal issues and challenges faced, it is hoped that appropriate solutions can be found to encourage sustainable and inclusive NRE development. in areas of need.

RESEARCH METHOD

How is the construction of renewable energy development arrangements in remote villages in Indonesia viewed from the aspect of environmental justice?

ANALYSIS AND RESULTS

Legal Issues in Planning for New Renewable Energy Development in Remote Villages in Indonesia in The Context of Environmental Justice

Energy issues involve debate over fundamental issues such as access to justice, financing, social acceptance, legal uncertainty, and environmental aspects (Muhdar, 2023). In addition, energy dependence on fossils ultimately confirms the trilemma energy imbalance which involves three interrelated challenges faced by the global energy system (Muhdar, 2023). First, energy security aims to ensure a reliable and safe supply of energy with diversified energy sources, infrastructure resilience and adequate reserves. Second, environmental sustainability focuses on sustainable energy production and consumption by reducing emissions, combating climate change, and switching to renewable energy sources. Third, economic affordability emphasizes fair prices and accessibility of energy for all through cost efficiency, energy efficiency measures, and alleviation of energy poverty. Therefore, balancing these three dimensions is important for the development of a sustainable, resilient, and inclusive energy system with comprehensive policies, technological innovation, international cooperation, and cross-sectoral collaboration, one

of which is by strengthening the idea of Local EBT in remote non-urban villages. energy independence in Indonesia.

Planning for local EBT development in remote, underdeveloped areas and local villages is a separate legal issue in making it happen. One of the problems referred to is related to regulation and licensing. As for the legal basis of PP No. 79 of 2014 (PP 79/2014) is a promotion of the use of EBT as the main energy source which is characterized by a target of new and renewable energy sources in the primary energy mix of 23% (2025) and 31% (2050), in addition to reducing Indonesia's dependence on fossil energy sources are limited and damage the environment (Ambabunga, 2019). Furthermore, Benedek, Sebestyén, & Bartók (2018) revealed that most of Indonesia's energy sources still depend on coal (59.20%) rather than natural gas (22.30%), renewable energy sources (12.32%) and fuel (6.18%).

PP 79/2014 stipulates complex licensing requirements that must be met by local EBT project developers, such as principle permits, construction permits, and operational permits. Obstacles that may arise include the clarity of procedures, the time required to obtain permits, and the coordination required between various related agencies.

Due to the ineffectiveness of the purpose of establishing Law 30/2007 and its derivative regulations (including PP 79/2014 and Permen ESDM Number 4 of 2020 concerning the Second Amendment to Permen ESDM No. 50 of 2017 (Republik Indonesia, 2007), the national legislators took the initiative to initiate a Draft Law The Law on New, Renewable Energy (RUU EBT) in the framework of increasing access to energy in remote and underdeveloped areas, including villages that apply local energy sources, especially those that are renewable (Mochamad Januar Rizki, 2019).

Previously, the enactment of Law Number 11 of 2020 concerning Job Creation (UU Ciptaker) was aimed at embracing investment and speeding up the licensing process by amending and deleting several provisions of Law Number 30 of 2009 concerning Electricity. Regarding the investment and development of several renewable energy power plants, the change observed is the simplification of business permits related to the supply of electricity. An example is the main service Online Single Submission System (OSS) as a license-based and non-licensing requirement. It has been upgraded to a risk-based OSS system from August 2021 onwards based on Decree No. 5 of 2021 which introduces Risk-Based Company Licensing as a derivative of the Ciptaker Law (Dirjen EBTKE Kementerian ESDM, 2021).

Then, after the publication of the Academic Paper of the New and Renewable Energy Draft Law (NA RUU EBT), the draft states that for state-owned enterprises, regionally-

owned enterprises, village-owned enterprises, cooperatives, privately-owned enterprises, and other business entities in accordance with the provisions of laws and regulations are given ease of licensing in the management of new and renewable energy (Komisi VII DPR RI, 2021). This is necessary to encourage investment and development of local EBT infrastructure in remote, underdeveloped areas and local villages, so the Government needs to stimulate it through such things as reducing taxes, easier access to funding, and giving priority in providing infrastructure. As stated in Article 29 NA, the EBT Bill emphasizes the importance of providing special incentives for legal subjects who wish to use clean energy, such as ease of licensing for the development of renewable energy. However, the absence of provisions that clearly grant rights to legal subjects other than PLN to use clean energy has the potential to result in rejection of permits to build clean energy facilities for other legal subjects. Furthermore, in developing local EBT, it is important to establish legal standards related to contracts and agreements between project developers and electricity consumers or investment partners, such as energy purchase agreements, financing contracts, and other agreements for project sustainability.

In terms of environmental law, does the development of Local EBT take into account aspects of environmental feasibility adequately, through analysis of environmental impacts, identifying and mitigating risks of environmental quality degradation, and of course also paying attention to social aspects. For this reason, in the NA of the EBT Bill for high-risk projects it is best to carry out an Environmental Impact Assessment (EIA) before issuing permits.

These efforts must also be in line with the provisions in the NA of the EBT Bill which encourage conservation of natural resources and responsible and sustainable use, such as prioritizing the use of renewable energy with minimal environmental impact, the use of efficient technology, soil and water conservation, and protection of natural habitats. and biodiversity. Furthermore, the NA of the EBT Bill should also contain provisions related to handling waste and controlling pollution produced by EBT projects through a number of requirements needed to manage waste safely and effectively, as well as limiting or reducing the emissions and pollution produced. Furthermore, the NA of the EBT Bill is supposed to set limits on greenhouse gas emissions and other pollution generated from conventional energy sources to promote the use of environmentally friendly and clean technologies.

In addition to technical aspects related to the environment, things that should not be ignored are related to social aspects, such as local community rights, public participation and fair distribution of benefits. For this reason, the NA of the EBT Bill needs to consider

that renewable energy projects can provide social and economic benefits to local communities, including job opportunities, infrastructure development, and access to affordable energy.

One of the social impacts that may occur as a result of the development of an EBT project is the relocation of communities related to their land rights, jobs, and other economic impacts. As for remote, underdeveloped areas, and local villages often have complex land tenure structures, including the existence of indigenous peoples or customary rights. Legal issues related to land rights, land conflicts, and land acquisition processes for EBT projects need to be considered and discussed. For this reason, the protection of local communities and vulnerable groups must be a priority.

Efforts to ensure that the interests of local communities can be channeled through public participation, including consultation, monitoring and transparency processes that allow for decision-making processes, protect their rights, and overcome potential social conflicts or objections to EBT projects. Therefore, the NA of the EBT Bill should encourage community involvement in decision-making regarding the development of renewable energy projects to ensure project sustainability and support.

Equally important is ensuring that the NA of the EBT Bill needs to discuss its impact on legal conflicts which lead to the need for an effective and fair dispute resolution mechanism, including arbitration or mediation, as well as the role of the judiciary in resolving disputes related to local EBT. In general, agrarian conflicts are experienced by vulnerable groups who rely on their survival from land and natural resources, such as farmers, fishermen and indigenous peoples, but are not limited to potential conflicts of interest with developers.

If the process of planning, implementing and evaluating local EBT development in remote, underdeveloped areas and local villages is carried out by all relevant parties in a comprehensive and adequate manner, it can create a Community Renewable Energy (CRE). This was shown by previous research that (CRE), namely activities related to comprehensive processes and social structures that facilitate local sustainable energy generation, accompanied by social and economic benefits obtained by local residents which are characterized by three main components, namely: 1) renewable energy production, 2) active participation of the community, and 3) benefits for the community (Greenius et al., 2010). For this reason, the provisions in the NA of the EBT Bill need to have the impact of establishing CRE for sustainable and just natural resource development.

Environmental justice is a concept in law that refers to efforts to ensure fair treatment of the natural environment and society in the context of human interactions

with the environment. This concept emerged as a response to global environmental problems, such as climate change, ecosystem damage, pollution and the decline in natural resources, which increasingly affect human life and the planet, in this case justice of access for rural communities who still lack energy power.

Therefore, the development of local EBT in remote and undeveloped areas and surrounding villages not only ensures better access to energy, but also contributes to sustainable development and a better quality of life for local communities. When implementing this idea, it is important to consider the specific needs and characteristics of each region to achieve the best results. In addition, concrete steps are needed to encourage the development of local EBT in remote and underdeveloped areas, as well as local villages, from a legal perspective. There needs to be synergy between various related parties, including the government, community, academia, and the private sector, to create a clear, effective, and friendly legal framework for the development of EBT. In addition, an inclusive and participatory legal approach is also needed, by involving local communities in the decision-making process and implementation of EBT projects. Community empowerment in terms of knowledge, skills and project ownership is also important to ensure the sustainability and effective use of EBT at the local level.

In addition, in the context of environmental justice, there is a need for equal access to obtain the energy needed by all humans, who are increasingly dependent on the increasing population and the development of increasingly sophisticated information technology. For this reason, environmental justice refers to the relationship between norms, cultural values, rules, policies, practices and decisions that aim to support community sustainability. This produces a safe, healthy and productive environment, which in turn contributes to improving the quality of life of the community by providing better comfort and security, which in this context is improving the government's supporting capacity for energy access through the development of local EBT to become an Independent Energy Village.

CONCLUSION

Regulations that have been set by the Government have not been able to guarantee access to electricity to local communities in remote and underdeveloped village areas, moreover the electricity resources are still concentrated in PT. (Persero) PLN, inadequate connectivity infrastructure, and uneven distribution of population in remote villages. For this reason, the construction of power plants by utilizing local EBT in remote villages is an effective solution. To achieve this goal and considering the enormous investment needs,

the policy that can be implemented more easily is to acquire a power plant that utilizes local EBT potential.

After the Ciptaker Law and its derivative regulations, it has been proposed to simplify business permits related to the provision of electricity through risk-based company licensing. However, the presence of the EBT Bill is expected to provide a strong legal umbrella for villages that do not yet have electricity to prioritize the use of local energy and determine strategies in order to solve this problem. These public issues include improving regulations and ease of licensing, ease of access, investment stimulation through incentive/stimulus programs, aspects of environmental protection, social aspects in the form of local community rights, public participation and fair distribution of benefits, interests of local communities, public participation, mainstreaming protection. towards local communities and vulnerable groups, in addition to dispute resolution mechanisms. Of course, this is done within the framework of good governance, which not only involves the central and regional governments, but also local communities and business actors. Environmental justice refers to the complex relationship between norms, cultural values, rules, policies, practices, and decisions to support community sustainability through the development of renewable energy in villages that contributes to improving the quality of life of communities. This spurred the creation of CRE social structures that facilitate sustainable local energy generation with social and economic benefits for local residents.

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