

# Collaborative Governance in Renewable Energy Utilization

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## Abstract

This study aims to analyze collaborative governance between the Regional Government and the State Electricity Company and the Biogas Power Plant in utilizing renewable energy in Rantau Sakti Village, North Tambusai District, Rokan Hulu Regency, Riau Province, Indonesia. This research was conducted using qualitative methods. Data collection techniques used in this study were interviews, observation and documentation study. Collaboration between the Regional Government and the State Electricity Company and the Biogas Power Plant in utilizing new and renewable energy has not yet been formed in a whole and comprehensive manner. If the Biogas Power Plant already has legality and clarity on the legal status and its management as a result of a change in the Regional Government Law which causes the authority in the energy sector to be drawn to the provincial level, the Regional Government of Rokan Hulu Regency loses management rights over the Power Plant Biogas.

**Keywords:** Collaborative Governance, New Renewable Energy, Electricity.



## A. INTRODUCTION

Indonesia is a country rich in natural resources. Natural resources in Indonesia such as abundant oil and gas, mineral water from the mountains, diverse plants and animals, and fertile soil. One area that is rich in natural resources in Indonesia is Riau Province. Almost all natural resources are owned by this province. The stomach of Riau Province contains petroleum, coal, gold, tin and other mining materials. While above it lies the vast wealth of forests, plantations, and agriculture.

Currently, in Riau Province, there are still many villages that have not yet been electrified. Though electricity is an important commodity for human life today. The majority of electricity in Riau Province is still supplied by the National Electricity Company (PLN). However, many electricity connections from PLN only reach sub-districts and have not yet reached villages that are planted, so to get electricity, rural communities that are not reached by PLN use generator sets that use fuel. For those who cannot afford a generator, are forced to use kerosene lamps and petromax. This also happened in Rokan Hulu Regency.

Rokan Hulu Regency, with an area of 7,449.85 km<sup>2</sup>, has various potentials and natural resources, including oil palm plantations. The area of oil palm plantations in Rokan Hulu is the largest in Riau Province. Along with the electricity problem that has not yet been resolved, another problem faced by villages in Rokan Hulu Regency is the presence of hazardous waste that becomes residue from palm oil processing into

cooking oil. According to Naibaho (1996), products produced by the basic palm oil industry only produce 25-30% of products consisting of crude palm oil (CPO) (20-23%) and palm kernel (5-7%), the rest produces good waste liquid, solid and gas waste. Methane emissions from palm oil waste are a source of renewable energy (EBT) which should be a profitable electricity solution.

According to Taylor's research (2014), Malaysia can meet a quarter of its electrical energy by utilizing methane from this processed palm oil waste. The advantage of using this methane, besides will not run out because it is a new and renewable energy source, while also reducing the adverse impact of palm oil waste on the environment. The Butar-Butar Study, et al. (2013) found that by using palm oil waste, the cost to produce electricity per kWh using palm oil waste was far cheaper than using diesel. The calculation of electricity production using palm oil biogas as fuel gets electricity production costs per kWh of Rp. 250 / kWh. This cost is far cheaper than using fuel oil which amounts to Rp 2,500 / kWh.

Butar-Butar (2013) and Taylor (2014) research provide facts as well as the knowledge that the use of palm oil liquid waste to generate electricity can produce electricity that is cheaper and more environmentally friendly. Environmentally friendly because it reduces the possibility of environmental damage due to hazardous waste it generates, it is cheap because its electricity production is cheaper than using fuel oil so that biogas power plants provide added value (economic) to the community. This biogas energy is used as a source of biogas power plants in Rantau Sakti Village.

After there was electricity coming from the Rantau Sakti PLTBg, the costs that the community had to pay to pay electricity were cheaper. However, new problems faced when PLN wanted to expand the PLN network to villages that had already enjoyed PLTBg. This is done to meet the electrification ratio of the Rokan Hulu Regency. However, this got a negative reaction from the people using PLTBg because the community was proud to use PLTBg. This pride comes from the ability of PLTBg that makes people able to meet their electricity needs independently.

This expectation is basically in line with other ESDM Ministerial Regulations No. 10 of 2017 Concerning Principles in the Power Purchase Agreement containing potential collaboration between PLN and PLTBg in terms of the supply or supply of electrical energy produced by PLTBg so that it can meet the needs of the voltage needed by PLN. This collaboration is certainly with the facilitation and mediation of the Regional Government as the leading sector so that the collaboration goes well.

If the Rokan Hulu Regency Government decides to give PLN the opportunity to replace the PLTBg, then that is also the authority of the Rokan Hulu Regency Government. The implementation of regional autonomy makes the district/city government have a special role in regulating the affairs of its government in accordance with the mandate of Law Number 23 of 2014 concerning the Regional Government. However, other problems arise when viewed from a series of program trips starting

from the proposal phase in 2014 (submission of proposals by the Rokan Hulu local government) to the establishment and operation of the PLTBg in 2015-2016 there is a transition to changes in the Regional Government Law from Law Number 32 the Year 2004 to Law Number 23 the Year 2014 wherein Law Number 23 the Year 2014 the authority of the Regional and Regency Governments in the energy sector is drawn to the Provincial level. This certainly has an institutional impact on the Regency / City Government and also other consequences.

The policy provides discretion for the Regional Government and cannot be interfered with by the central government except in matters that have been regulated and agreed (including energy affairs) because regional autonomy is essentially an independent process for each region to regulate governance and carry out development in the region. This is in accordance with the purpose of giving regional autonomy for the purpose of independence in every region in Indonesia. In line with that, Mardiasmo (2003) also stated that regional governments have an authority which are policymakers and implementers of rural development programs. In this connection, if the rural electricity supply is decided to use PLN, then that is the authority of the Rokan Hulu Regency Government.

Whatever policy is taken by the Regional Government of Rokan Hulu Regency, it must not be separated from the spirit of regional autonomy, namely that the purpose of laying authority in the implementation of regional autonomy is to increase people's welfare, equity, and justice, democratization and respect for local culture and pay attention to the potential and diversity of the region. The policy also cannot be separated from the implementation of essential government functions according to Rasyid (2016), which includes services, empowerment, and development. If these signs are considered, then the best policy that will be effective and in accordance with the aspirations of the community will be produced.

Studies on collaborative governance have been carried out by previous researchers (Wanna, 2008; Silvia, 2011; Purwanti, 2016; Emerson et al., 2012; Donahue & Zeckhauser, 2012). But no one has discussed the collaborative governance between the Regional Government and the State Electricity Company and the Biogas Power Plant in utilizing new renewable energy. Therefore, the purpose of this research is to analyze collaborative governance between the Regional Government and the State Electricity Company and Biogas Power Plant in utilizing renewable energy by taking a case study in Rantau Sakti Village, North Tambusai District, Rokan Hulu Regency, Riau Province.

## **B. METHOD**

This research was conducted with a qualitative method with a post-positivism paradigm, which seeks to express social facts or facts that are ontologically incomprehensible by human limitations (Chadwick et al., 1991; Moleong, 2013; Sugiyono, 2013). Data collection techniques used in this study consisted of observation, in-depth inter-

views, and documentation studies. The data that has been obtained is then analyzed through three stages, namely data reduction, data presentation, and verification/conclusion (Miles & Huberman, 1984).

### C. RESULT AND DISCUSSION

Implementation of Rokan Hulu Regency Government's policy in utilizing hazardous waste into luminous waste by referring to Regulation of the Minister of Energy and Mineral Resources (ESDM) Number 10 of 2012 concerning Physical Implementation of New Renewable Energy Utilization, following the theory of Public Policy Implementation Riant Nugroho (2004), consists of Intervention Programs, Intervention Projects, Intervention Activities, and Beneficiaries.

In the case of the Intervention Program, the utilization of hazardous waste into luminous waste is a program from Desa Mandiri Energi (DME) where DME is a rural development area in the context of creating employment, reducing poverty, and producing its own energy needs as well as opportunities for developing its production capacity, and not limited in the administrative territory of a village.

The manifestation of this DME program is the desire of the Government of Rokan Hulu Regency to overcome the electricity crisis it experienced by submitting a proposal (Proposal) to the Central Government through the Ministry of Energy and Mineral Resources and technically to the Director-General of New Renewable Energy and Energy Conservation (EBTKE). This proposal was then received by the Central Government so that a PLTBg development project emerged, through the proclamation and location determination process based on the regions with the lowest electrification ratio, natural resource potential (availability of raw materials), and also the readiness of the community in the success of the PLTBg development project. Based on these considerations, the location of Rantau Sakti Village in the North Tambusai District was determined as the location of the intervention project.

The activities carried out in the utilization of hazardous waste are certainly processing and converting or converting these wastes into something that is beneficial to the lives of rural communities, among others producing electricity sources that can improve social, economic, environmental conditions, especially health and the survival of rural communities. Eliminating threats in the form of hazards to human health and the environment posed by toxic methane gas is also a major activity because this gas if not used or not will be a major source of environmental and health pollution.

In terms of utilization (beneficiary), the utilization of palm oil liquid waste can, among other things, operate 24 hours; stable, reliable and not influenced by weather factors; environmentally friendly (reducing greenhouse gas emissions); solid waste from palm oil mills can be used as fertilizer; electricity generated from biogas is relatively cheap compared to fuel-based electricity technology (diesel generators or PLTD). Other tangible impacts that can be felt directly are an increase in the quality of life of

thousands of families in the local village and surrounding villages, public facilities such as schools and houses of worship get free lighting, reduced crime rates such as theft and others.

Collaboration between PLTBg Rantau Sakti, PT. PLN (Persero), and the Government of Rokan Hulu Regency when viewed from a theoretical perspective, in this case, the theory of Collaborative Governance from Emerson, Nabatchi and Balogh (2012) consisting of 3 (three) Variables, namely System Context (system context), Drivers (activator), and collaborative dynamic (basically the dynamics of collaboration) have not yet been created and formed in a whole and comprehensive way. However, indications and potential collaboration between Rantau Sakti PLTBg, PT. PLN (Persero), and the Government of Rokan Hulu Regency are very wide open because indeed the three of them are parties or actors involved in collaborative activities and events in the government's DME program by utilizing the potential of palm oil liquid waste manifested in the PLTBg development project in Rantau Sakti Village.

The indications referred to here are clear that the government as one of the actor's functions and acts as a Regulator, Mediator, and Facilitator. Actors from the private sector, in this case, are PT. PLN (Persero) is a BUMN that manages and manages electricity affairs in Indonesia, and the Village Government as a formal institution of the Village Community is inevitably the parties that always touch each other. Whereas the potential contained herein is that the government provides legal-formal space for these three actors to collaborate to achieve the interests and benefits that can be felt by all participants (actors) of collaboration.

Each party or actor can certainly have their own goals and objectives. The government as regulator, mediator, and facilitator certainly has an obligation to guarantee the welfare of the people/community, PT. PLN as a BUMN, of course, has a work target as an achievement that must be done to maintain its existence and increase profits, as well as the village community together with elements of their government which are not only objects of development but also as subjects of development having hopes and ideals.

Based on the explanation, the main potential of the Rantau Sakti PLTBg is besides fulfilling the energy needs in his own village and also surrounding villages is to sell electricity that has been successfully produced by the PLTBg, because the potential energy that can be generated by the PLTBg is around 1 MW even up to 2 MW will not be fully absorbed for the internal needs of the village and has advantages that can be sold to PT. PLN (Persero), moreover this has been regulated by the government, in this case, the Minister of Energy and Mineral Resources Regulation of the Minister of Energy and Mineral Resources Number 10 of 2017 Concerning Principal in the Power Purchase Agreement and Regulation of the Minister of Energy and Mineral Resources Number 12 of 2017 Regarding EBT Utilization for Manpower Supply Electricity as has been discussed extensively in sub-chapter 4.3 regarding collaboration policies between



these three actors.

But with various collaboration events coupled with the ups and downs that occur between the three actors in many ways such as applicable laws and regulations, constraints of resources and costs, even technical obstacles faced, making collaboration management carried out by the three parties have not yet met expected performance. Because of this as an academic effort in order to raise facts from the "emic" (reality) to the "ethical" (theory) realm, a theoretical proposal or proposal is needed to construct an effective and ideal model of collaborative governance according to the researcher's view.

Based on the problem situation (real system) that actually happened (realistic picture) and the modeling process used in constructing the model (theoretical view), then in an effective and ideal collaboration for actors or stakeholders (stakeholders) who will collaborate in completing programs and activities together, the researcher proposes a concept (idea) that is named NEGERI SERIBU SULUK with the model (design/specimen) with the term Double Loop Actor Interaction.

The reason and the basic conception with the name NEGERI SERIBU SULUK that the term is a nickname that is pinned to the Rokan Hulu Regency as a local identity, where etymologically (language) suluk comes from Arabic with the root of the word salaka which means "road", wholly suluk means a determined journey for people who walk (Salik) to Allah, by going through some boundaries and places (maqam) and riding some high station/dignity that is a spiritual and nafsani journey. Due to the influence of Islam is very strong, so that gave birth to religious leaders (ulama). Whereas in terminology (term), Suluk (seclusion) is a guide for human beings (human) in a perfect and practical form in personal spiritual development to form physical and spiritual balance and harmony, curb lowly desires, eternal thoughts in the heart, mind control and gestures, order of thought, feeling and body, temperament change from "animal" temperament to noble temperament, control of lust and emotions, balanced mind, calmness and purity of heart, and patience. With this understanding and understanding, the Regency of Rokan Hulu then accepts the designation as "The Land of the Thousand Suluk" or a religious country which is a place to study religious knowledge and is usually carried out in a mosque (mashallah) whose numbers are very large and are scattered throughout Rokan Regency Hulu.

In the development of governance, a collaborative approach governance becomes a trend and an interesting phenomenon that is studied and studied. Collaborative governance exists like a "cure" that can cure various policy pathologies, both in terms of the politicization of regulations and swelling budget, and failure of policy implementation (Asnell & Gash, 2008). Collaborative governance is also referred to as adaptive management to ensure the implementation of a program (Kallis, Kiparsky, & Norgaard, 2009) and also Emerson, et al. (2012), using the term "regime" (time, period, period) to include specific models, or systems for public decision making where cross-border collaboration represents prevailing patterns of behavior and activities, where regimes are

defined as "a set of principles, rules, norms, and procedures for decision making which are implied and explicit in every expectation of the actors that meet in a certain area/point".

In Indonesia, collaborative governance gave birth to new enthusiasm due to historical experience in governance during the New Order. Some of the features that emerged during this period included the dominant role of the state, the lack of willingness of the government to involve actors outside the state, and the centralistic and top-down development patterns. Along the way, these patterns are coupled with the failure of the government to anticipate shifts or changes in the policy environment and then influence as one of the causes of the collapse of the Soeharto regime in 1998. Therefore, the recommendation to involve multi-parties (government, private and public) in management government and public policy and the initiation of collaborative governance-patterned governance are believed to continue to develop in various regions along with the regional autonomy agenda.

The theory of collaborative governance by its supporters is always having positive implications for the success of policy in fact not always true. Critical analysis in this study shows that the actors (collaborators), although ultimately consensus on shared goals, actually also still have their ulterior motives. Based on the explanation above, each theory must have weaknesses and shortcomings even though it seeks to be built on a foundation of generality that is able to represent and illustrate facts and reality and is simple or easy to digest but still has a gap of improvement. Similarly, the collaborative governance theory from Emerson, et al. (2012), called the Collaborative Governance Regime (CGR), is also inseparable from various deficiencies that are not necessarily able to represent and translate problems that exist in a particular region or place.

Therefore, researchers are trying hard to reconstruct a new model that is able to solve the problems that exist in the study site, researchers named this model with the name "Double Loop Actor Interaction" with a meaningful NEGERI SERIBU SULUK: Negotiations, Emulsions Gradation, Estimation, Resolution, Induction; Sensing, Emotions, Respecting, Innovating, Budgeting, Uniting; Solidarity, Uniformity, Legality, Universality, Cohesiveness. The findings of the above model have implications for the development of the Collaborative Governance Regime (CGR) theory by changing the Collaborative Governance Regime (CGR) flow with a linear pattern (parallel), namely the process of collaboration starting from Input @ Process @ Output becomes a circular pattern (circular), where the actors who consist of 2 (two), 3 (three) or more can continue to process like a wheel that rotates continuously during collaboration, which is sometimes in a vertical position or SULUK (up/down) sometimes in a horizontal position or SERIBU (right / left) ) with the center of concentration the collaboration takes place in a central or NEGERI position.

This model seeks to present in the academic platform as an academic proposition that elevates the values of local wisdom that are judged to be able to interpret the situa-

tion and provide solutions to problems of collaboration, and as an ideal model/concept for viewing and approaching collaboration problems between Rantau Sakti PLTBg, PT. PLN (Persero), and the Government of Rokan Hulu Regency which has not been perfectly defined through an approach using the Collaborative Governance Regime (CGR) model.

#### D. CONCLUSION

Collaborative governance between the Regional Government and the State Electricity Company and the Biogas Power Plant in utilizing Renewable Energy based on the Minister of Energy and Mineral Resources Regulation No. 10 of 2017 can be seen from 3 (three) variables namely system context, drivers and collaborative dynamic. Basically collaborative governance has not yet been created and is formed in its entirety and is comprehensive because based on the facts, it only indicates that there is a potential for collaboration between the Regional Government and the State Electricity Company and the Biogas Power Plant.

The collaborative governance model between the Regional Government and the State Electricity Company and the Biogas Power Plant is the Double Loop Actor Interaction Model with the name "NEGERI SERIBU SULUK" which means: Negotiations, Emulsions, Gradations, Estimates, Resolutions, Induction; Sensing, Emotions, Respecting, Innovating, Budgeting, Uniting; Solidarity, Uniformity, Legality, Universality, Cohesiveness.

#### REFERENCES

1. Abidin, S. Z. (2003). *Reformasi Administrasi dan Pembangunan Nasional*. Jakarta: FE Universitas Indonesia.
2. Agranoff, R., & McGuire, M. (2003). *Collaborative public management: New strategies for local governments*. Georgetown University Press.
3. Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of public administration research and theory*, 18(4), 543-571.
4. Arikunto, S. (2006). *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
5. Butar-Butar, D. P., Amin, M. N., & Kasim, S. T. (2013). Analisis Biaya Produksi Listrik Per-Kwh Menggunakan Bahan Bakar Biogas Limbah Cair Kelapa Sawit (Aplikasi Pada PLTBGS PKS Tandun). *Singuda Ensikom*, 3(1), 17-22.
6. Chadwick, B. A., Bahr, H. M., & Albrecht, S. L. (1991). *Metode Penelitian Ilmu Pengetahuan Sosial*. Sulistia ML, Mujianto Y, Sofwan A, Suharjito, penerjemah. *Semarang (ID): IKIP*.
7. Donahue, J. D., & Zeckhauser, R. J. (2012). *Collaborative governance: Private roles for public goals in turbulent times*. Princeton University Press.



8. Dunn, W. N. (2003). *Pengantar Analisis Kebijakan Publik*. Yogyakarta: Gadjah Mada University Press.
9. Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of public administration research and theory*, 22(1), 1-29.
10. Khaidir, K. (2016). Pengolahan Limbah Pertanian Sebagai Bahan Bakar Alternatif. *AGRIUM*, 13(2), 63-68.
11. Kotta, H. Z., & Wintolo, D. (2018). *Energi terbarukan: konsep dasar menuju kemandirian energi*. Yogyakarta: UGM Press.
12. Meiwanda, G. (2018). Kontestasi Energi Antara Masyarakat Desa Rantau Sakti dan PLN dalam Pemanfaatan Tenaga Listrik di Desa Rantau Sakti, Kabupaten Rokan Hulu. *NATAPRAJA*, 6(1), 25-34.
13. Miles, M. B., & Huberman, M. A. (1984). *Qualitative Data Analysis*. London: Sage Publication.
14. Moleong, L. J. (2013). *Metodologi Penelitian Kualitatif*. Jakarta: Remaja Rosda Karya.
15. Naibaho, P. M. (1996). *Tekhnologi Pengolahan Kelapa Sawit*. Medan: Pusat Penelitian Kelapa Sawit.
16. Purwanti, N. D. (2016). *Collaborative Governance (Kebijakan Publik dan Pemerintahan Kolaboratif, Isu-Isu Kontemporer)*. Yogyakarta: Center for Policy & Management Studies, FISIPOL UGM
17. Selin, S., & Chevez, D. (1995). Developing a collaborative model for environmental planning and management. *Environmental management*, 19(2), 189-195.
18. Silvia, C. (2011). Collaborative governance concepts for successful network leadership. *State and local government review*, 43(1), 66-71.
19. Simatupang, T. M., & Sridharan, R. (2008). Design For Supply Chain Collaboration. *Business Process Management Journal*, 14(3): 401-418.
20. Sugiyono. (2013). *Memahami Penelitian Kualitatif*. Bandung: Alfabeta.
21. Suharto, E. (2005). *Analisis Kebijakan Publik: Panduan Praktis Mengkaji Masalah dan Kebijakan Sosial*. Bandung: Alfabeta.
22. Tangkilisan, H. N. S. (2003). *Teori dan Konsep Kebijakan Publik" dalam Kebijakan Publik yang Membumi, konsep, strategi dan kasus*. Yogyakarta: Lukman Offset.
23. Taylor, P. G., Bilinski, T. M., Fancher, H. R., Cleveland, C. C., Nemergut, D. R., Weintraub, S. R., ... & Townsend, A. R. (2014). Palm oil wastewater methane emissions and bioenergy potential. *Nature Climate Change*, 4(3), 151-152.
24. Thomson, A. M., & Perry, J. L. (2006). Collaboration processes: Inside the black box. *Public administration review*, 66, 20-32.
25. Wahab, S. A. (2005). *Analisis Kebijaksanaan: Dari Formulasi ke Implementasi Kebijaksanaan Negara*. Jakarta: Bumi Aksara.
26. Wanna, J. (2008). Collaborative government: meanings, dimensions, drivers and outcomes. *Collaborative governance: a new era of public policy in Australia*, 3-12.
27. Winarno, B. (2012). *Teori dan Proses Kebijakan Publik*. Yogyakarta: Media Presindo.