Performance Indicators for Energi Management of Tourism in The Pangururan District Kabupaten Samosir

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Abstract. . The Lake Toba area is a national tourist area visited by various tourists both from within and outside the country, and is included in the 88 national tours which are the parent of tourism development in Indonesia. One of the infrastructures that must be considered is the availability of electrical energy sources in the tourist area of Lake Toba. Pangururan District as one of the tourism and administrative areas in the Lake Toba area must have sufficient electrical energy needs and become sustainable tourism. The purpose of this study was to examine the Performance of Tourism Energy Management in Pangururan District, Samosir Regency with an approach to analyzing the level of energy use and conservation, energy management programs, and utilization of renewable energy sources. The research method used is direct field observation and literature study, both theory and supporting documents in the research, which is then analyzed by interpreting the data obtained based on the theory and applicable policies. The results of this study are to identify that the need for electrical energy in the tourist area in the Pangururan sub-district is quite evenly distributed and the need for electrical energy is also met, but in the tourist area in the Pangururan sub-district conservation activities and the use of sustainable energy sources carried out by the government and the tourism business unit are still very low. a little. In addition, this research is expected to be a source of knowledge about Energy Management in the Tourism Sector.

Keyword: energy, Pangururan, tourists;

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1 Introduction

The Toba Lake area is one of the 88 National Tourism Strategic Areas (KSPN) which refers to the 2011 Indonesian government regulation, namely regulation number 50 which contains the national tourism development master plan from 2010 to 2025 [1]. As one of the national tourist areas, of course, Lake Toba is visited by tourists from various regions, both national and

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international tourists. In developing the tourism industry in the Lake Toba area, of course, it cannot be separated from the availability of facilities and infrastructure. One of them is electrical energy, where electrical energy is one of the most important energies in everyday life [2]. related to the development of the Lake Toba area as one of the priority areas, Lake Toba should have implemented it as a sustainable tourism area where one of the concepts of sustainable tourism is the use of renewable energy sources so as to reduce the use of fossil energy and realize clean and environmentally friendly energy [3]. Where over time the availability of fossil energy sources is decreasing and depleting so that the use of renewable energy (EBT) is the best alternative [4].

Energy sources in Indonesia are controlled by the state which is regulated in the constitution, namely in Article 33 paragraph (3) of the 1945 Constitution which reads "Earth and water and the natural resources contained therein are controlled by the state and used for the greatest possible benefit." prosperity of the people" [5]. Electrical energy is one of the results of the utilization of natural wealth and technology which has an important role for the state in realizing the achievement of national development [6]. Electrical energy is a primary need of the community, especially in the development of national tourist areas such as Lake Toba so that Energy Management Performance in the Lake Toba Tourism area must be managed properly and in accordance with established regulations

Pangururan District is one of the tourism and administrative centers in Samosir Regency, as a tourism and administrative area, this sub-district is a city that is in great demand to be visited by tourists to travel or to carry out other activities, the high number of visitors, especially in the tourism sector and city activities in this district. making this area one of the areas with the largest consumption of electrical energy in the Lake Toba area, so research is carried out in order to examine how the Energy Management Performance in Tourism in Pangururan District, Samosir Regency.

2 Research method

In solving problems in the research on Energy Management Performance Indicators in Tourism in Pangururan District, Samosir Regency, it can be solved by direct field observations or conducting surveys and collecting literature studies both theoretically and supporting documents in this research, in the form of pictures, photos, newspapers, as well as related documents and so on. Therefore, the right type of research is to use qualitative descriptive methods by showing more in-depth situations and conditions or phenomena [7], on the existing conditions of Tourism Energy Management Performance in Pangururan District, Samosir Regency and analyze it based on theories related to research.

In this study, the method for collecting data on energy management issues is based on several variables, namely analyzing the level of energy use and conservation, energy management programs, and the use of renewable energy sources in tourism in Pangururan District, Samosir Regency. by conducting agency surveys such as directly visiting the relevant offices or accessing the e-platforms of the relevant agencies. In addition to conducting direct surveys of agencies, direct field observations were also carried out in order to obtain information and descriptions of existing conditions as well as information regarding energy management in Pangururan District, Samosir Regency.

Meanwhile, to analyze the problem of Energy Management in Tourism in Pangururan District, Samosir Regency, researchers generally interpret the data that has been obtained and then connect it with a theoretical or policy basis. Data analysis is basically a process of simplifying data into a simpler form so that it is easy to read and interpret. After the data is analyzed and simpler information is obtained, the results are interpreted to seek broader meaning and implications of the research results [8]. The data analysis method in this study is to analyze the data that has been collected regarding the existing condition of Energy Management in Tourism in Pangururan District, namely in the form of analyzing the level of energy use and conservation, energy management programs, and the use of renewable energy sources based on policies, theoretical basis and existing conditions. in that area.

3 Analysis and Discussion

The research location chosen was in the Pangururan sub-district, Samosir district. This location was chosen because the Pangururan sub-district is one of the tourism and administrative centers in Samosir district where this sub-district has many visitors who go for tours so that this area is one of the areas with the use of electrical energy which is quite basic so it needs an energy management management. which is applied so that the use of electrical energy can be controlled and there are no problems regarding electrical energy in the area, especially in the tourism area. In the Pangururan sub-district, the responsibility for electrical energy needs is the Samosir branch of PLN in accordance with PP RI No. 18 of 1972 where PLN is a company that is given special rights and powers and is responsible for the generation, transmission and distribution of electric power that applies throughout the country. regions in Indonesia [9].

The level of use of electrical energy in Pangururan District, based on data from PLN Samosir for the last three years, 2018, 2019 and 2020, Pangururan sub-district has electrical energy customers in 2018 as many as 6,261 electrical energy customers with an average daily use of 1,941 kwh/ day with electricity usage of 0.61 kwh/person/day while in 2019 there was an increase of 8,557 electrical energy customers with an average daily use of 2,652 kwh/day with electricity usage of 0.63 kwh/person/day while in 2020 electricity users in Pangururan sub-

district also experienced an increase to reach 9,019 electrical energy customers with an average daily use of 2,795 kwh/day with electricity usage of 0.65 kwh/person/day. In the Pangururan sub-districts which are monitored/observed from the baseline indicator of energy consumption per day taken from the data in 2018, 2019 and 2020, the performance indicators are produced in 2019 and 2020 where there is a decline, in 2019 with a value of 3.28 and in 2020 with a value of 3.17 This decline was also caused by the impact of the Covid 19 period which resulted in a decrease in the number of visitors to tourist areas so that energy consumption also fell. The amount of electricity consumption includes the business sector, housing and tourism objects, but there is no data from PLN Samosir regarding the details of electrical energy consumption per category [10].

Energy use must have increased rapidly in line with increasing economic growth and population growth [11]. Likewise, what happened in the Lake Toba area, precisely in the Pangururan sub-district, Samosir Regency where this area which is one of the Lake Toba tourist areas will definitely continue to experience an increase in the amount of the economy that can be obtained from the tourism sector and from other sources so that there will be an increase in the amount of energy. What is needed is mainly electrical energy, therefore Pangururan as one of Lake Toba's tourist areas must takeaction to pay attention to the need for electrical energy to support tourism better and be classified as sustainable tourism, sustainable energy management can be done by conserving energy, in accordance with presidential decree N0.43 of 1991. Energy conservation is an effort to reduce the amount of energy consumption and energy consumption costs and has a good impact on the environment, where the main energy source currently used is the burning of fossil fuels which resulting in global warming [12]. In the Pangururan sub-district as a tourism area, there has been no energy conservation effort carried out in this area, where the government has not set or made an energy conservation program in tourist areas so that energy use is still running as usual, the conservation program should be something that must be strongly monitored. Pay attention to the Lake Toba National Tourist Area so that Lake Toba tourism can be included in the sustainable tourism category. In addition to conserving energy, national tourism areas should also utilize renewable resources.

Renewable energy sources are energy sources that can be used indefinitely and can be easily recovered in an affordable time so that their existence will never run out [13] Renewable energy sources are a very good option for the development of national tourism, especially in the Pangururan area which is a In the Lake Toba tourist area, renewable energy is also described in Law No. 30 of 2007 concerning energy, namely renewable energy is energy that comes from sources from wind, geothermal, bioenergy, sunlight, waterfalls, and water flow as well as movement and movement. temperature differences in the ocean layers [14]. The Samosir area as one of the five National Tourism Strategic Areas (KSPN) has the potential for tourism development which has an important influence in increasing economic, social and cultural

growth, empowering natural resources, carrying capacity of the environment as well as defense and security. In its development, as KSPN has had access to renewable energy such as solar power, water and geothermal. In its continuity as a KSPN, the Samosir area is still in the stage of improvement, including the use of renewable energy sources. This shows that there is only 1 micro hydro power plant (PLTMH) located in Samosir Regency in Sianjur Mula-mula sub-district. This PLTMH has a capacity of 130 KWh which can illuminate 293 households with 400 watts of power in each house, however, in Pangururan District, both in residential houses and tourist attraction business buildings, not many apply renewable energy sources. Pangururan sub-district only has one type of hotel business that uses renewable resources with solar panels, Solar Power Plant (PLTS) is a method of generating electrical energy by utilizing solar energy [15] in the Pangururan area that applies renewable energy sources from sunlight, namely at the Vantas hotel which is located on the white sands of Parbaba, energy needs The electricity generated by the solar panels themselves at the Vantas Hotel is only used for garden lights in the Ventas Hotel area as shown in Figure 1.

Figure 1. Analysis of park lighting tourism facilities that use energy solar panels in Pangururan district

4 Conclusion

Pangururan sub-district is one of the tourist and administrative areas in the Lake Toba area which is a national tourism development area which should have facilities and infrastructure that must be considered, especially the energy needs that must be fulfilled, in the Samosir tourist area, especially in the Pangururan sub-district, the need for electrical energy has fairly evenly distributed and meets the needs of the community and tourists who visit. In addition to the need for energy, energy sources must also be very careful where the electrical energy used in the Lake Toba area still uses non-renewable energy, while the Lake Toba area as a national tourism development area should have become a sustainable tourism area , this should be a concern of the government in the development of the Samosir tourism area, especially in the Pangururan

sub-district where renewable energy sources must be the main program in the development of the tourism area, in addition to developing renewable energy sources, energy conservation activities are also a problem that must be considered where in the tourism area in Pangururan there is no energy conservation activity. carried out by the government both in the urban development sector and in the tourism area.

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REFERENCES

[1] Rizky Arimazona Siregar1, Hanny Wahidin Wiranegara1, Henky Hermantoro, LAKE TOBA TOURISM AREA DEVELOPMENT, TOBA REGENCY SAMOSIR TATALOKA - VOLUME 20 NUMBER 2 - MAY 2018 - P ISSN 0852-7458 - E ISSN 2356-0266
[2] Rimbawati, Zulkifli Siregar, Mohammad Yusri, Muhammad Al Qamari, APPLICATION OF SOLAR POWER GENERATORS ON TOURISM OBJECTS OF KAMPUNG SAWAH TO REDUCE ELECTRICITY PURCHASE COSTS, Journal of Community Service Vol 4 No 1 of 2021 Page 145-151 p-ISSN: 2598-1218: e -ISSN: 2598-1226
[3] Bureau of Communication, Public Information Services and Cooperation of the Ministry of Energy and Mineral Resources, Journal of Energy: EBTKE and Electricity Strategic Program, Edition 02, 2016, p. 9.
[4] Aan Jaelani, Renewable Energy Policy in Indonesia: The Qur'anic Scientific Signals in Islamic Economics Perspective, International Journal of Energy Economics and Policy, Vol.7 No.4, 2017, p. 193
[5] Zen Umar Purba, State Interests in the Indonesian Petroleum Industry, International Law, Constitution and Globalization, Journal of International Law Vol.4 No.2, January 2007, Institute for the Study of International Law, Faculty of Law, University of Indonesia, pages 257-258.
[6] Judicial Commission of the Republic of Indonesia, Op.cit, p. 1097.
[7] Sukmadinata., Nana Syaodih., 2007. Educational Research Methods, Bandung: Rosdakarya.
[8] Wardiyanta., 2006. Tourism Research Methods, Yogyakarta: ANDI.
[9] Article 7 Government Regulation Number 18 of 1972 concerning “Electric” Public Companies
[10] PLN Samosir, Total use of electricity consumption in the Pangururan sub-district of Samosir Regency 2018, 2019, and 2020.
[11] Syamsir Abduh, Energy, Mineral & Energy Security Fund Management, Vol.14 No.2, June 2016, Jakarta: Research and Development Agency for Energy and Mineral Resources, Ministry of Energy and Mineral Resources, p. 4.
[12] Hanan Nugroho, Energy Conservation as an Forgotten Must in Indonesia's National Energy Management: Learning From Japan and Thailand
[13] Daryanto, Op. Cit, p. 26.
[14] Ministry of Energy and Mineral Resources, Loc.cit
[15] Timotus C, Ratnata W.I, Mulyadi Y, Mulyana E, Design and Solar Power Generation, Competitive Research Grant Report, Bandung, 2009.