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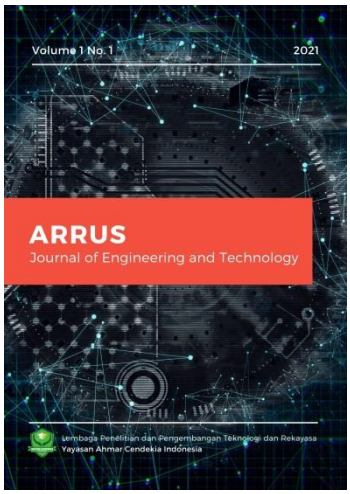

*Corresponding author: Rosyid Ridlo Al Hakim, Department of Electrical Engineering, Faculty of Engineering and Computer Science, Jakarta Global University, Depok, Indonesia

E-mail: rosyidridlo@student.jgu.ac.id

REVIEW ARTICLE

Techno-Economic Study of Substation Electric Power in Indonesia: A Mini-Review

Rosyid Ridlo Al Hakim[1,*], Eko Ariyanto[1], Yanuar Zulardiansyah Arief[1,2]

[1]Department of Electrical Engineering, Faculty of Engineering and Computer Science, Jakarta Global University, Depok, Indonesia. Email: rosyidridlo@student.jgu.ac.id

[2]Department of Electrical and Electronics, Faculty of Engineering, Universiti Malaysia Sarawak (UNIMAS), Sarawak, Malaysia. Email: ayzulardiansyah@unimas.my

Abstract: Energy is something that people need every day. One of the energies that are glorified to meet people's energy needs is electrical energy. The need for electrical energy in Indonesia continues to increase in line with economic growth and the increasing population. One of the components of electric power that is useful for delivering electric current to transmission networks is a substation. With the feasibility of techno-economic, it is possible to know the feasibility of the quality of an electric power system based on financial analysis. This paper provides a mini-review of the techno-economy of substation electricity and its maintenance in several regions in Indonesia today. The research stages consist of literature study, identification of article titles, article abstract screening, complete article selection, and mini-review reviews. Several studies are still not widely applied to the calculation of the cost of energy consumption to customers. In addition, the basic cost of providing electricity, the profit from electricity sales, and the payback period method need to be improved in research related to the techno-economic analysis of electrical energy. It is important to do this to determine the potential feasibility and the estimated advantages and disadvantages of an electric power system.

Keywords: Energy Economics, Engineering Economics, Load Analysis, Power-Loss.

1. Introduction

Energy is something that people need every day (Al Hakim, Pangestu, et al., 2021). One of the energies that are glorified to meet people's energy needs is electrical energy(Al Hakim, 2020). The need for electrical energy in Indonesia continues to increase in line with economic growth and increasing population(Al Hakim, Ropiudin, et al., 2021; Arief et al., 2019). One of the components of electric power that is useful for delivering electric current to transmission networks is a substation. Substations can deliver electricity to the load from the generating center(Istiyono, 2020).

The quality of electrical energy is very important to study because it is related to the smooth flow of electric power from the power plant to the load. A non-linear load is a load in which the output waveform of current and voltage is not the same as the incoming waveform. Substations play a role in the distribution system of electric power and the quality of distribution of electrical energy. With the feasibility of techno-economics, it is