**COVER LETTER**

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*[085250986419]*

[*Oct 24, 2023*]

Dear,

We wish to submit an original research article entitled “[**PVSyst Application for Planning a Hybrid System Rooftop Solar Power Plant at the Makassar Eye Hospital**]” for consideration by SINERGI.

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere.

In this paper, we report on / show that:

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| Field | : | Electrical Engineering |
| Topic | : | Renewable Energy |
| Brief Background | : | Data shows that Indonesia's solar energy potential is worth 207,898 MW. This potential can be utilized as an alternative energy source that is cheap and available throughout the year. Due to the difficulty of obtaining large areas of land in urban areas for the construction of Solar Power Plants (SPP), the use of rooftops is the best solution for the construction of SPP. |
| Research Problem | : | The right solution to reduce the large amount of electricity used in office buildings and hospitals is to use rooftops as land for SPP. One of the buildings that has this potential is the Makassar Eye Hospital. |
| Overview of Method | : | The stages of this research flow start from identifying the problem of electricity availability and daily electricity consumption at the Makassar Eye Hospital as well as the potential for solar radiation before designing the solar power plant system, then conducting a location assessment to obtain the data needed in designing the SPP system. In this research, the planning process was carried out using PVSyst software. Technical analysis is carried out based on the electrical energy produced and calculating system performance. Meanwhile, the economic analysis includes capital costs for installing a SPP system, based on component prices on the market. Then calculate the capital return costs based on the feasibility of SPP investment which is determined from the calculation results of the Payback Period (PP), Net Present Value (NPV), Internal Rate of Return (IRR), Profitability Index (PI) and Return of Investment (ROI). |
| Significant finding | : | Obtained the results of designing the Hybrid SPP system for the Makassar Eye Hospital Building using PVSyst software. Based on the findings of the economic analysis, the initial investment cost for SPP is Rp. 544.031.733. The energy production value per kilowatt-hour (kWh) reaches Rp. 1.278 resulting in a Payback Period (PP) of 13,8 years, Net Present Value (NPV) of Rp. 138.182.638, Internal Rate of Return (IRR) of 11,51%, and Return on Investment (ROI) of 25,4%. These results confirm the feasibility of the plan, because the IRR value exceeds 8,43%. |

We have no conflicts of interest to disclose.

Thank you for your consideration of this manuscript.



Sincerely,

Sonong

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**AUTHORSHIP STATEMENT**

We wish to submit an original research article entitled “[**PVSyst Application for Planning a Hybrid System Rooftop Solar Power Plant at the Makassar Eye Hospital**]” for consideration by SINERGI.

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript.

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**POTENTIAL REVIEWERS**

Please submit 3 (three) potential reviewers (*that have not listed in SINERGI*) to speed up the review process that competent for the topic and has a good reputation in that area.

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