Penerapan konsep GREENSHIP new building dan 101 kWp roof-top On-Grid PV system pada gedung integrated creative engineering learninglLab (i-CELL) Fakultas Teknik Universitas Indonesia = Application of the GREENSHIP new building concept and 101 kWp Roof-top On-Grid PV system in the integrated creative engineering learning Lab (i-CELL) building faculty of Engineering University of Indonesia

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Abstrak

Fakultas Teknik Universitas Indonesia membangun laboratorium baru yang akan digunakan sebagai balai penelitian dan inovasi bagi mahasiswa dan staf untuk berkolaborasi. Pada pembangunan Gedung i-CELL FTUI dilakukan pengembangan PLTS rooftop 101 kWp yang terhubung ke jaringan PLN. Energi yang dihasilkan hingga saat ini telah mengurangi suplai energi listrik dari PLN pada Gedung i-CELL FTUI sebesar 10,59%/tahun. Penelitian ini bertujuan untuk mengetahui persentase potensi penghematan energi yang dihasilkan oleh PLTS 101 kWp tersebut. Produksi energi diestimasi menggunakan HelioScope dan unjuk kerja langsung ke lokasi instalasi PLTS. Data yang diperlukan antara lain lokasi PLTS, dan spesifikasi teknis PLTS. Simulasi menghasilkan data energi total dalam satu tahun sebesar 135,9 MWh/tahun. Selain dari proyeksi potensi penghematan dari PLTS, penelitian ini juga memuat analisis penilaian green building dengan menggunakan rating penilaian GREENSHIP New Building V1.2.

.....The Faculty of Engineering, University of Indonesia is building a new laboratory that will be used as a research and innovation center for students and staff to collaborate. In the construction of the i-CELL FTUI Building, a 101 kWp rooftop Photovoltaic System was developed which is connected to the PLN network. The energy produced so far has reduced the supply of electrical energy from PLN in the FTUI i-CELL Building by 10.59% / year. This study aims to determine the percentage of potential energy savings generated by PLTS 101 kWp. Energy production is estimated using HelioScope and direct investigation to the Photovoltaic System installation location. The data required includes the location of the Photovoltaic System and the technical specifications of the Photovoltaic System. The simulation produces a total energy data in one year of 135.9 MWh / year. Apart from the projection of potential savings from the Photovoltaic System, this study also includes an analysis of green building assessments using the GREENSHIP New Building V1.2 rating.