

Simulasi dan optimasi solar thermal cooling system pada gedung manufacturing research center untuk mereduksi biaya operasional dengan menggunakan perangkat lunak energyplus dan genopt = Simulation and optimization of solar thermal cooling system in manufacturing research center building to reduce operational cost using software energyplus and genopt / Kemal Rahadian

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Abstrak

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Solar Thermal Cooling System with its absorption cycle is expected to replace the conventional air conditioning system with vapor compression cycle because it is more efficient in terms of cost and energy. However, due to the heat of the sun is not always stable, the system needs to be equipped with a backup energy source, one of which is CNG. In the Manufacturing Research Center building, the lack of facilities that support availability of CNG causes large operating costs. Therefore, Optimization efforts with the aim to reduce operating costs are needed. Simulation and optimization performed with EnergyPlus and GenOpt. The conclusion is that the installation of 100 kW electric heater tankless hot water storage tank is able to reduce total operating costs by 34.95% compared to the use of a combination of solar thermal and CNG and 49.92% compared with the full use of CNG.

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