

## INTISARI

*Preventive Maintenance Package* (PMP) merupakan program perawatan berkala alat berat yang bertujuan menjaga keandalan unit dan mengurangi risiko kerusakan mendadak. Namun, efektivitas biaya dan performa unit dengan penerapan PMP masih menjadi pertanyaan bagi sebagian perusahaan. Penelitian ini bertujuan untuk menganalisis perbandingan biaya perawatan dan performa unit *bulldozer* Komatsu berkapasitas 20 ton yang menggunakan PMP dan yang tidak menggunakan PMP. Metode penelitian menggunakan pendekatan kuantitatif komparatif melalui pengumpulan data dengan wawancara, observasi lapangan, dan studi dokumen. Analisis performa dilakukan menggunakan metode *Overall Equipment Effectiveness* (OEE) yang terdiri dari tiga parameter, yaitu *availability*, *utilization*, dan *productivity index*. Hasil penelitian menunjukkan bahwa biaya perawatan hingga 6.000 *hours meter* untuk unit PMP sebesar Rp161.500.000 sedangkan unit tanpa PMP mencapai Rp171.529.000. Dari sisi performa, nilai OEE unit dengan PMP sebesar 89,45% dan unit tanpa PMP hanya mencapai 69%. Kesimpulannya, penerapan PMP terbukti lebih efisien secara biaya dan mampu meningkatkan efektivitas performa unit *bulldozer* dibandingkan metode perawatan konvensional.

**Kata Kunci:** Analisis Biaya, *Bulldozer*, *Overall Equipment Effectiveness* (OEE), Performa Unit, *Preventive Maintenance Package* (PMP)

## ***ABSTRACT***

*The Preventive Maintenance Package (PMP) is a periodic maintenance program for heavy equipment aimed at maintaining unit reliability and reducing the risk of sudden breakdowns. However, the cost-effectiveness and performance of units using PMP remain a concern for some companies. This study aims to analyze the comparison of maintenance costs and performance of 20-ton Komatsu bulldozer units using PMP and those not using PMP. The research employed a comparative quantitative approach with data collected through interviews, field observations, and document studies. Performance analysis was conducted using the Overall Equipment Effectiveness (OEE) method, which consists of three parameters: availability, utilization, and productivity index. The results show that maintenance costs up to 6,000 hours meter for units with PMP amounted to IDR 161,500,000, while units without PMP reached IDR 171,529,000. In terms of performance, the OEE value for units with PMP was 89.45%, whereas units without PMP only achieved 69%. In conclusion, the implementation of PMP is proven to be more cost-efficient and significantly improves bulldozer performance compared to conventional maintenance methods.*

**Keywords:** *Bulldozer, Cost Analysis, Overall Equipment Effectiveness (OEE), Preventive Maintenance Package (PMP), Unit Performance*