

Analisis Kelayakan Ekonomi Dan Identifikasi Risiko Penggantian Water Meter Analog Ke Smart Metering Water = Economic Feasibility Analysis and Risk Identification For The Replacement of Analog Water Meter With Smart Metering Water

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Abstrak

PT DEF mengalami kehilangan air (Non Revenue Water) sebesar 48.76% yang melebihi dari nilai rata-rata nasional senilai 20%. Untuk menurunkan tingkat kehilangan air, memberikan tagihan secara akurat, memberikan solusi cepat untuk mengetahui kebocoran pipa, memantau kualitas air, membaca jumlah pemakaian air secara real time, dan mengurangi potensi kesalahan di water meter pelanggan perlu dilakukan penggantian meter analog menjadi smart meter. Sehingga pada penelitian ini akan dilakukan analisa dampak kemungkinan risiko pada investasi Smart Meter dengan menggunakan pendekatan Value at Risk (VaR). Simulasi dijalankan menggunakan Software @Risk Palisade Decision Tools Suite yang menghasilkan nilai Net Present Value (NPV) sebesar Rp 59.954.037.342, Internal Rate of Return (IRR) sebesar 18.4% dan Payback Period (PP) selama 6.6 tahun. Sehingga investasi layak dijalankan. Kemudian risiko yang paling mempengaruhi tingkat kelayakan investasi adalah biaya >smart meter, hal ini terlihat dari hubungan risiko 3 variabel input dengan nilai NPV 5% menunjukkan sebesar +0.9955 lebih besar dari 0.

.....PT DEF is experiencing Non Revenue Water (NRW) losses of 48.76%, which exceeds the national average 20%. To reduce the level of water loss, accurate billing, quick solution to detect pipe leaks, water quality monitoring, real time water usage readings, and minimizing potential errors in customer water meters, it is necessary to replace analog meters with smart meters. Therefore, this study will analyze the potential risk impact on smart meter investments using the Value at Risk (VaR) approach. The simulation is conducted using the @Risk Palisade Decision Tools Suite Software, resulting in a Net Present Value (NPV) of Rp 59.954.037.342 an Internal Rate of Return (IRR) of 18.4% and a Payback Period (PP) of 6.6 years. Thus, the investment is deemed feasible. The cost of smart meters is the risk that most influences the investment feasibility level, as evidenced by the relationship between the risk of the three input variables and the NPV value at 5%, which is + 0.9955 greater than 0.