

## **Pengendalian Risiko dan Dampak Paparan PM2.5 dan SO2 dari PLTU pada Masyarakat = Risk and Impact Control of PM2.5 and SO2 Exposure of Power Plant to Communities (A Study in the Power Plant Babelan Bekasi)**

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### **Abstrak**

Kebutuhan batu bara untuk produksi energi listrik pada PLTU terus meningkat sering dengan pertumbuhan ekonomi dan penduduk, pembakaran batu bara menghasilkan PM2.5 dan SO2 di udara dapat mengakibatkan gangguan kesehatan masyarakat, penurunan kondisi sosial dan ekonomi masyarakat. Maka diperlukan Pengendalian pencemaran udara. Tujuan penelitian ini adalah menganalisis risiko dan dampak paparan polutan udara, memberi rekomendasi pengendalian risiko dan dampak. Metode penelitian adalah analisis risiko kesehatan lingkungan, analisis tingkat pemahaman dan persepsi, analisis cost of illness, dan analisis SWOT. Hasil penelitian menunjukkan kelompok paling berisiko adalah responden berusia >12-55 tahun dan penduduk tinggal <2 kilometer dari PLTU. Tingkat pemahaman dan persepsi masyarakat pada kriteria sedang. Biaya rata-rata beban kesehatan selama sebulan berkisar 7%-15% dari nilai rata-rata pendapatan individu perbulan. Rekomendasi pengendalian pencemaran udara dari PLTU adalah pelaksanaan program pemerintah dan penegakan peraturan terkait pengendalian pencemaran udara dan rekomendasi hasil analisis SWOT seperti pengetatan baku mutu udara kegiatan industri, prioritas anggaran manajemen risiko dan dampak, menggunakan energi ramah lingkungan, ruang hijau, dan edukasi kepada masyarakat. Kesimpulan penelitian ini adalah pembakaran bahan bakar fosil pada PLTU berkontribusi pada pencemaran udara yang mempengaruhi gangguan kesehatan, penurunan pendapatan dan gangguan sosial masyarakat, sehingga diperlukan pengendalian risiko dan dampak secara struktural dan nonstruktural dari pihak pemerintah dan perusahaan dalam menciptakan produksi energi listrik ramah lingkungan.

.....The need for coal for the production of electrical energy at PLTU increase often with economic and population growth, the result of burning coal produces harmful pollutants such as PM2.5 and SO2 which affect public health problems, premature death, the decline in social and economic conditions of the community. Therefore, implement the strategies are needed. The research aimed to analyze the risk and impact of air pollutants exposure, and develop risk and impact control. The research method used is environmental health risk analysis, level of understanding and perception analysis, cost of illness analysis, and SWOT analysis. The result showed the group that most risk is 13-55 years old, and people who live less than two square kilometers from the power plant. The level of public understanding and perception resulted in moderate criteria. The average cost of illness is 7%-15% of the average monthly income of each person. The Recommendations for air pollution control are the implementation of government programs and enforcement of regulations related to air pollution control of power plant activity and recommendations from a SWOT analysis regulations of power plant location, providing guidelines for environmental controlling, production management related to air quality control regularly, tightening air quality standards for industrial activities, prioritizing air pollution control budgets, providing green space, implementing clean energy and renewable energy to supply electricity, capacity building of air quality control. The conclusion is The production of electrical energy on PLTU can have air pollution impact such as health problems

decreased income, and social disruption, Air pollution control includes structural and nonstructural strategies from internal and external PLTU to provide energy production that environmentally friendly for the communities.