Wulandari, P. C., 2020. Estimasi Emisi Sektor Transportasi dan Analisis Kemampuan Penyerapan Emisi Karbondioksida (CO_2) di Jalur Hijau Jalan Kenjeran Surabaya. Skripsi ini di bawah bimbingan Prof. Dr. Ir. H. Agoes Soegianto, DEA. dan Febri Eko Wahyudianto, S.T., M.T. Program Studi S1 Teknik Lingkungan, Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui jumlah kendaraan bermotor yang melintasi Jalan Kenjeran, mengetahui estimasi emisi CO_2 yang dihasilkan oleh kendaraan bermotor, dan mengetahui estimasi sisa emisi CO_2 setelah adanya kemampuan penyerapan vegetasi pada jalur hijau Jalan Kenjeran Surabaya. Penelitian ini dilakukan dengan perhitungan jenis dan jumlah kendaraan bermotor menggunakan metode *traffic counting* pada pagi, siang, dan sore hari dalam waktu satu minggu. Perhitungan konsentrasi CO_2 pada perhitungan estimasi emisi CO_2 menggunakan metode pemodelan *Box Model Street Canyon*. Estimasi emisi CO_2 di Jalan Kenjeran Surabaya sebesar 2.710,9608 ton/tahun. Perhitungan daya serap CO_2 oleh tumbuhan menggunakan metode sensus vegetasi dengan tipe pancang, tiang, dan pohon. Perhitungan vegetasi dilakukan menurut jenis dan jumlah tumbuhan yang ada di jalur hijau Jalan Kenjeran. Vegetasi dengan tipe pancang, tiang, dan pohon di sepanjang jalur hijau Jalan Kenjeran Surabaya mampu menyerap emisi CO_2 di Jalan Kenjeran sebesar 874,8996 ton/tahun. Emisi CO_2 di Jalan Kenjeran melebihi kemampuan daya serap CO_2 vegetasi di sepanjang jalur hijau Jalan Kenjeran, sehingga emisi CO_2 tidak terserap sempurna oleh vegetasi di jalur hijau Jalan Kenjeran.

Kata Kunci: CO_2, emisi, penyerapan, vegetasi

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ABSTRACT

This research aims to determine the number of motorized vehicles that cross the Kenjeran Road, determine the estimated carbon dioxide (CO_2) emissions generated by motorized vehicles, and determine the estimated residual carbon dioxide (CO_2) emissions after the ability to absorb vegetation on the green line of Kenjeran Road, Surabaya. This research was conducted by calculating the type and number of motor vehicles using the traffic counting method in the morning, afternoon, and evening in a week. Calculation of carbon dioxide (CO_2) concentrations in the calculation of estimated carbon dioxide (CO_2) emissions using the Box Canyon Street Model modeling method. Estimated carbon dioxide (CO_2) emissions on Kenjeran Road, Surabaya of 2,710,9608 tons/year. Calculation of carbon dioxide (CO_2) absorption by plants uses the vegetation census method with saplings, poles, and trees. Vegetation calculations are carried out according to the type and number of plants that exist in the green line on Kenjeran Road. Vegetation with saplings, poles, and trees along the green line of Kenjeran Road, Surabaya is able to absorb carbon dioxide (CO_2) emissions on Kenjeran Road by 874.8996 tons/year. Carbon dioxide (CO_2) emissions on Kenjeran Road exceed the ability of carbon dioxide (CO_2) absorption capacity of vegetation along the Kenjeran Road green line, so that carbon dioxide (CO_2) emissions are not absorbed completely by vegetation on the Kenjeran Road green line.

***Keywords**: Carbon dioxide, emissions, absorption, vegetation*