

**Kajian Emisi dan Serapan Karbon Dioksida (CO<sub>2</sub>) Periode Kebijakan  
*Work from Home* (WFH) (Studi Kasus: Ruas Jalan di Jakarta Pusat)**

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**Intisari**

Jakarta Pusat sebagai jantung DKI Jakarta memiliki arus pergerakan orang dan barang yang tinggi. Pembakaran bahan bakar fosil dan perubahan luas RTH di kawasan perkotaan menyebabkan akumulasi emisi CO<sub>2</sub> mengalami peningkatan setiap tahun. Tahun 2020 Jakarta mengalami pandemi Covid19 yang menyebabkan pemberlakuan kebijakan WFH. Tujuan penelitian ini adalah mengidentifikasi pola konsumsi BBM saat periode WFH, menganalisis besaran emisi CO<sub>2</sub> kendaraan bermotor pada tiga ruas jalan Jakarta Pusat saat periode WFH serta menganalisis kapasitas serapan CO<sub>2</sub> oleh RTH jalur hijau *existing* di lokasi penelitian. Metode penelitian ini dilakukan secara kuantitatif melalui rumus perhitungan emisi dan serapan CO<sub>2</sub>. Pengumpulan data pola konsumsi BBM masyarakat dilakukan secara *purposive sampling* melalui kuesioner dan dianalisis secara deskriptif. Besaran emisi CO<sub>2</sub> diperoleh melalui perhitungan data LHR kendaraan dan profil jalan serta dianalisis menggunakan *software* Mobilev 3.0. Serapan CO<sub>2</sub> dilakukan menggunakan perhitungan daya serap CO<sub>2</sub> berdasarkan data jenis dan jumlah tanaman. Hasil penelitian menunjukkan bahwa pola penurunan konsumsi BBM saat WFH dibandingkan sebelum WFH paling signifikan ditunjukkan oleh variabel menurut pekerjaan (karyawan swasta 40%), domisili (Jakarta 55%) dan jenis kendaraan bermotor (sepeda motor 32% dan mobil 29%). Besaran emisi CO<sub>2</sub> saat WFH sebesar 68.863 ton/tahun (PSBB Transisi) dan 52.287 ton/tahun (PSBB Total). Terjadi penurunan emisi CO<sub>2</sub> sebesar 24% antara kondisi PSBB Transisi dan PSBB Total. Kapasitas serapan CO<sub>2</sub> oleh vegetasi RTH publik jalur hijau kondisi *existing* sebesar 3.976,8 ton/tahun. Implementasi upaya dan strategi melalui kebijakan yang tepat sangat penting agar dapat menurunkan emisi CO<sub>2</sub> kendaraan bermotor dan meningkatkan serapan CO<sub>2</sub> oleh tanaman RTH publik kondisi *existing*.

**Kata kunci:** Emisi CO<sub>2</sub>, Konsumsi BBM, Serapan CO<sub>2</sub>, *Work from Home* (WFH)

## **Carbon Dioxide Emission and Sequestration During Work from Home (WFH) (Case Study: Roadways in Central Jakarta)**

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### **Abstract**

As the heart of DKI Jakarta, Central Jakarta has significantly high flow of people and goods. The burning of fossil fuels and changes in urban green spaces cause an increase of the accumulated CO<sub>2</sub> emission every year. In 2020, Jakarta faced the outbreak of the Covid19 pandemic which resulted in the implementation of the Work from Home (WFH) policy, and limiting vehicle use in the city. This research aims to identify the pattern of fuel consumption during WFH, analyze the amount of CO<sub>2</sub> emissions during WFH, and to emphasize the capacity of CO<sub>2</sub> sequestration by vegetation in the green lane. This study uses a quantitative method with calculation formula of CO<sub>2</sub> emission and sequestration. The data of fuel consumption was collected by purposive sampling using questionnaires and analyzed descriptively. The CO<sub>2</sub> emission is obtained by measurement of ADT vehicle and road's profile and analyzed using Mobilev 3.0. The sequestration of CO<sub>2</sub> is measured using the formula of CO<sub>2</sub> absorption based on type and number of plants. The results showed that the pattern of decreasing fuel consumption during WFH compared to before WFH differ significantly by occupation (40% private employees), domicile (Jakarta 55%), and type of vehicles (32% motorcycles and 29% cars). The amount of CO<sub>2</sub> emission during WFH is 68.863 tons/year (PSBB Transitional) and 52.287 tons/year (PSBB Total). The CO<sub>2</sub> emission has declined by 24% during WFH. The capacity of CO<sub>2</sub> sequestration by the existing green lane is 3.976,8 tons/year. The implementation of the strategies through the right policies is very pivotal to reduce the amount of vehicle's CO<sub>2</sub> emissions and increase the number of CO<sub>2</sub> sequestration by the existing green open spaces.

Keywords: CO<sub>2</sub> Emission, CO<sub>2</sub> Sequestration, Fuel Consumption, Work from Home (WFH)