ABSTRACT

Estimation of potential source region of long range PM2.5 in Bandung City has been made in this study. PM2.5 concentration data from Telkom University's Tokong Nanas Building measuring station and backward trajectory data for the period of March 1st, 2019 – February 29th, 2020 were used. The analysis was carried out by dividing the period based on seasonal cycle of Indonesia. PM2.5 concentration data showed that the highest concentrations recorded in the rainy season (November – February) and 2nd transition (March – May), 1st transition (September – November) and dry season (May – August) consecutively. The backward trajectory analysis showed that the long-distance PM2.5 transportation route came from southeast direction through the Indian Ocean and from the west to the northwest direction through the areas of South Sumatra, Banten, and DKI Jakarta. Based on the PSCF results, the potential source regions were Indian Ocean for the dry, rainy, and 2nd transitional periods; and DKI Jakarta & Java Sea for the 1st transitional and rainy periods. Concentration-weight trajectory (CWT) calculations showed similar results in which the Indian Ocean was the region with the highest contribution during the dry season, 2nd transition period, and rainy season, while DKI Jakarta and the Java Sea were regions with the highest contribution during the 1st transition period. The majority of long-distance pollutants were from the oceans, which possibly caused by salt aerosols and marine transportation activity.

Keywords: *PM2.5, long-rage transport of pollutant, backward trajectory, PSCF*.