303

ESTIMATING VOC EMISSIONS FROM RESIDENTIAL BIOMASS COMBUSTION IN FINLAND

A. Tohka, N. Karvosenoja
Research Programme for Global Change, Finnish Environment Institute, Helsinki, Finland

One of the most significant non-methane volatile organic compounds (NMVOC) emission sources in Finland is residential wood combustion. It contributed to 22 kton (NMVOC)/a (13% of total NMVOC emissions) in 2000 according to present emission inventories, that comprise only one wood use volume and international default emission factor for the residential combustion sector. However, residential combustion takes place in various types of equipment, e.g. small boilers, stoves, masonry ovens, kitchen ranges, sauna stoves, open fireplaces etc., and emission factors vary widely depending on furnace type, fuel characteristics, time of the year and operating parameters. In this paper wood use volumes and NMVOC emission factors were estimated to 10 different residential combustion equipment categories based on literature sources. Influence of operating parame-ters and fuel quality was investigated. Furthermore, rough estimates for costs of abatement options are given. Reported emission factors from residential combustion varied from 10 to over 2000 mg(NMVOC)/MJ. Emission estimate of this study was slightly higher than the estimate in the current inventory. The results of this study show how important detailed information on national characteristics of residen-tial wood combustion is in order to achieve satisfying accuracy on emission estimates. In means of un-derstanding nature and volume of VOC emissions from domestic sector well documented sensitivity study on this area in order to perceive error estimates in country level. The results will be used to refine national emission inventories and assess the background material in-cluded in the ongoing revisions of air pollution agreements in Europe.